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RELATIONSHIPS BETWEEN GOAL ORIENTATION, PERCEIVED MOTIVATIONAL CLIMATE, PERCEIVED ABILITY AND ADAPTIVE ACHIEVEMENT BEHAVIORS OF YOUTH DURING VOLLEYBALL PRACTICE SESSIONS

BY

TAN WEE KEAT CLARA ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of

MASTERS OF ARTS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **Relationships between goal orientation, perceived motivational climate, perceived ability and adaptive achievement behaviors of youth during volleyball practice sessions** submitted by **Tan Wee Keat Clara** in partial fulfillment of the requirements for the degree of **Masters of Arts.**

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"By the grace of God, I am what I am, and His grace was not in vain"

1 cor. 15:10

To my late father Tan Lam San, with love.

ABSTRACT

Achievement motivation theory suggests that one's goal orientation, perceived motivational climate, and perceived ability influence one's achievement behaviors. Although previous research findings have supported theoretical predictions, this work has relied mainly on self-reports rather than observations of achievement behaviors (Solmon, 1995). The purpose of this study was to examine the relationships of participants' goal orientation, perceived motivational climate, and perceived ability with their observed achievement behaviors in a sport setting for youths.

Sixty-eight junior high volleyball players completed the Task and Ego Orientation in Sport Questionnaire (Duda & Nicholls, 1992), the Perceived Motivational Climate in Sport Questionnaire (Seifriz, Duda & Chi, 1992), and questions about perceived ability. Achievement behaviors were coded using a modified version of the Academic Learning Time in Physical Education observation instrument (Siedentop, Tousignant & Parker, 1982) during practice sessions. The relationships of goal orientation and perceived motivational climate with adaptive achievement behavior were determined using Pearson product-moment correlations. The moderating effects of perceived ability on these relationships were determined by the z-test using Fisher's Zr transformation.

Results provided partial support for the theoretical predictions. Consistent with predictions, results indicated that perceived ability had a moderating effect on the relationship between perceived ego climate and adaptive achievement behavior. Results also indicated that adaptive achievement behavior was more strongly related to perceived

ego climate than to ego goal orientation. These results were discussed in terms of their practical implication for coaches, teachers and sport practitioners.

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CHAPTER ONE - INTRODUCTION

A prominent feature of youth sport is the variation in the achievement behaviors of individuals. Some participants select challenging tasks, exhibit optimal effort, and persist through difficulty and failure when learning new skills, whereas others avoid challenging tasks, exert minimal effort, and do not persist when faced with difficulty and failure. Understanding this variation in motivated achievement behavior is one of the main issues that has been pursued by sport psychologists, educators, and coaches for theoretical purposes and for the purpose of enhancing participation in sports, increasing motivation, and improving performance. Some of the central questions that have been addressed in the psychological literature dealing with achievement behaviors in youth sport are: What factors influence effort and persistence? What achievement goals affect performance and participation? and What factors lead to variation in achievement behaviors? (Weiss & Chaumeton, 1992).

Recent motivation research stemming from a social cognitive perspective has indicated that an examination of goal-directed behavior, which includes how individuals approach, engage in, and respond to achievement activities, provides insight into behavioral variability, and affective and cognitive responses in sport. This approach, known as the achievement goal approach, has identified two major goal perspectives that influences one's achievement behaviors: a mastery goal perspective and an ego goal perspective. Generally, the approach suggests that the adoption of either a mastery goal or an ego goal in achievement situations often results in different behaviors. Individuals who adopt a mastery goal perspective are likely to engage in adaptive achievement

behaviors such as exerting optimal effort and persistence, even in the face of difficulty and/or failure. However, individuals who adopt an ego goal perspective may engage in adaptive achievement behavior only if they are confident that they can succeed, that is, if their perceived ability is high. However, if these individuals have doubts about their ability, they tend to engage in nonadaptive achievement behaviors, such as exerting minimal effort and persistence, especially when faced with task difficulty and/or failure. According to the achievement goal approach, whether one adopts a mastery or an ego goal perspective in one's achievement setting depends on both personal and situational factors, namely, one's goal orientation and perceived motivational climate. The conceptualized relationships between goal orientation, perceived motivational climate, goal perspectives, perceived ability, and achievement behavior are presented in Figure 1.

Motivation research related to achievement goal perspectives has neither operationally defined the construct of goal perspectives per se nor examine its influence on achievement behaviors. Rather, the research has progressed along two relatively separate tracks (Ames, 1992). One has focused on the influence of the participant's goal orientation on achievement behavior based on the assumption that goal orientation in part influences one's goal perspective, which in turn, influences one's achievement behavior. The other track has focused on the influence of the participant's perception of the motivational climate on achievement behavior, based on the assumption that perceived motivational climate in part influences one's goal perspective, which in turn, influences one's achievement behavior. In sum, the research has shown that both goal orientation and perception of the motivational climate influence one's achievement behaviors. The

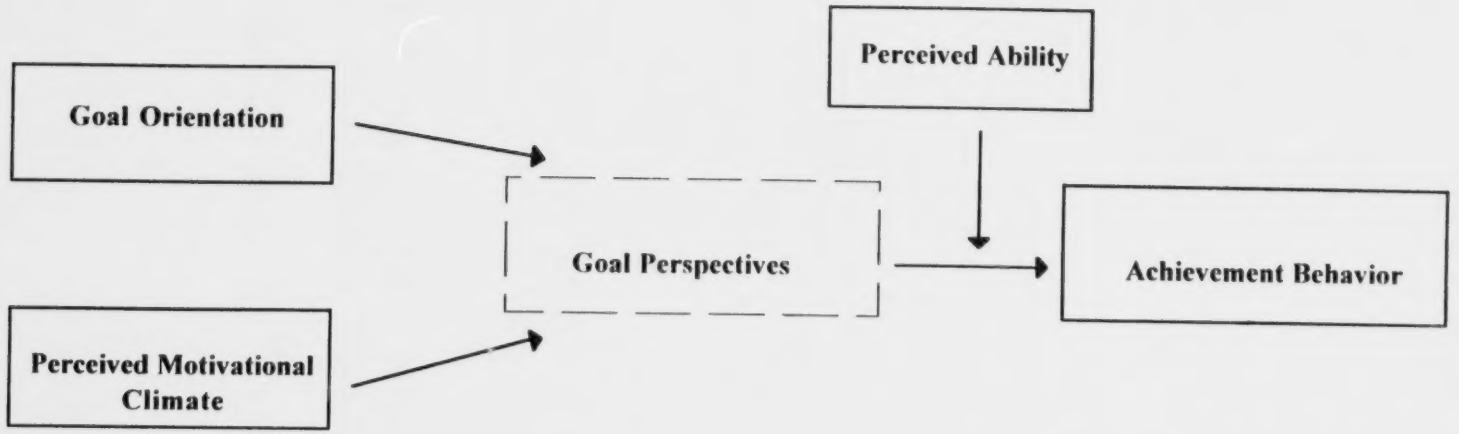

Figure 1. Theoretical framework of the achievement goal approach.

research has also demonstrated that these relationships are moderated by the participant's perceptions of his or her ability.

Although past research has provided evidence to support several theoretical predictions, few studies of the achievement goal perspective theory have incorporated into one study all three major variables of goal orientation, perceived motivational climate, and perceived ability. In addition, the research has relied mainly on self-report measures, and few studies have been conducted in a natural sport setting.

Purpose of the Study

The purpose of this study was to examine the relationships of participant's goal orientation, perception of motivational climate, and perception of ability with the achievement behavior of junior high school youth participating in the interschool volleyball league. Four major questions were of interest:

1. Were participants' goal orientation and participants' perception of motivational climate both related to their adaptive achievement behavior?

2. Was the relationship between participants' goal orientations and achievement behaviors moderated by the participants' perception of their abilities?

3. Was the relationship between participants' perceptions of motivational climate and adaptive achievement behaviors moderated by the participants' perception of their abilities?

4. Which relationship was stronger, the relationship between participant's goal orientation and adaptive achievement behavior or the relationship between participant's perceptions of motivational climate and adaptive achievement behavior?

Significance of the Study

Motivation research has identified three important variables of achievement behavior, namely, goal orientation, perceived motivational climate and perceived ability. Previous research in the sport domain has provided evidence to support the theoretical predictions concerning the relationships of goal orientation, perceived motivational climate, perceived ability, and achievement behavior. However, the data reported thus far have relied almost exclusively on self-reports rather than observation of actual behavior to measure the major indicants of achievement behavior -- task choice, effort, persistence and performance (Solmon, 1995). In addition, few studies have examined the relationships between these variables in a natural sport setting. The purpose of this study was to improve upon the previous research not only by combining the three identified major variables into one study, but also by using direct observation to measure achievement behavior in a natural youth sport setting.

Delimitations of the Study

1. The study was restricted to participants of ages 12 - 15 in a single youth sport, volleyball.

2. Only schools in the south quadrant of one large urban centre were asked to volunteer; schools in the north, east, and west quadrants and in other school systems were not accessed.

Limitations

1. The general assumption concerning the respondents was that they respond to the questionnaire items thoughtfully, honestly and in accordance to their actual feelings, behaviors and attitudes.

2. The participants involved in the junior high interschool volleyball league were similar to those involved in other youth sport programs.

3. The sample was made up of volunteers.

4. Due to time and financial constraints, it was not possible to include all volunteer players in the study. The sample was small.

5. As a study conducted in a natural setting, there were inherent limitations to control the setting, such as, the tasks or activities conducted during the practice sessions, or the duration of the practice sessions.

6. Each subject was observed during only one practice session.

Definitions

Achievement Situations

Achievement situations are defined as situations in which the primary concern of the individual is his or her personal competence to meet the situational demands (Weiss & Chaumeton, 1992).

Adaptive Achievement Behavior

Adaptive achievement behaviors are defined as behaviors that promote the likelihood of achievement (Roberts, 1992). These behaviors are those where the individual exerts effort, concentrates more, selects challenging tasks, and exhibits sustained persistence even in the face of difficulty and/or failure (Dweck, 1986; Roberts, 1992).

Goal Perspectives

Goal perspectives refer to two major goals of actions in achievement situations. The two major goal perspectives are mastery and ego goal perspectives (Ames, 1992; Dweck, 1986; Nicholls, 1984b, 1989; Roberts, 1992).

Mastery goal perspective. Mastery goal perspective is when an individual strives to demonstrate mastery of a task, to acquire skills, and to do one's best. This goal drives achievement behavior in situations where mastery or learning is deemed important. Success and failure are subjectively defined by the individual's self-referenced perception

of his or her performance (Ames, 1984; Dweck, 1986; Maehr & Braskamp, 1986; Nicholls, 1984b; Roberts, 1992).

Ego goal perspective. Ego goal perspective is when an individual strives to demonstrate superior ability as compared to others. This goal drives achievement behavior in situations where interpersonal competition or social comparison exists. Success and failure are judged by comparison with the performance of others (Ames, 1984; Dweck, 1986; Maehr & Braskamp, 1986; Nicholls, 1984b; Roberts, 1992).

Goal Orientation

Goal orientation refers to an individual's predisposition or preference towards either a mastery goal perspective or an ego goal perspective in achievement situations (Duda, 1992; Dweck & Leggett, 1988; Nicholls, 1989).

Mastery goal orientation. Mastery goal orientation refers to an individual's predisposition or tendency to emphasize the mastery goal perspective in achievement situations (Duda, 1992; Dweck & Leggett, 1988; Nicholls, 1989).

Ego goal orientation. Ego goal orientation refers to an individual's predisposition or tendency to emphasize the ego goal perspective in achievement situations (Duda, 1992; Dweck & Leggett, 1988; Nicholls, 1989).

Perceived Motivational Climate

Perceived motivational climate refers to an individual's perception of the degree to which the achievement situation was characterized by an emphasis on mastery or ego goal perspective (Seifriz, Duda & Chi, 1992).

Perceived mastery climate. Perceived mastery climate refers to an individual's perception that the achievement situation is characterized by an emphasis on mastery goals, such as an emphasis on personal improvement and trying one's best (Ames, 1992; Roberts, 1992).

Perceived ego climate. Perceived ego climate refers to an individual's perception that the achievement situation is characterized by an emphasis on ego goals, such as competitive outcomes and winning (Ames, 1992; Roberts, 1992).

Perceived Ability

Perceived ability refers to one's self-perception of how well one can perform a task. It may either be self-referenced (based on one's improvement in learning, performance, and/or mastery of the task) or norm-referenced (based on the abilities of relevant others) (Cox, 1994; Roberts, 1992).

Hypotheses and Questions

Relationship Between Goal Orientation and Adaptive Achievement Behaviors

For junior high school youth participating in the interschool volleyball league, it is

hypothesized that:

1. There will be a positive relationship between their mastery goal orientation and adaptive achievement behavior during their volleyball practice session.

2. There will be no relationship between their ego goal orientation and adaptive achievement behavior during their volleyball practice session.

The rationale underlying 1) and 2) relates to the motivation research which suggests that an individual's goal orientation influences one's achievement behavior in sport. Specifically, individuals who are high on mastery goal orientation, are focused on developing new skills or achieving a sense of mastery based on a self-referenced set of standards. As such, these individuals are more likely to engage in adaptive patterns of behaviors. Individuals who are high on ego goal orientation however often display differential behavioral patterns. Both theoretical and research work suggest that the influence of an ego goal orientation on adaptive achievement behaviors is moderated by self-perception of ability.

It is further hypothesized that:

3. The relationship between their mastery goal orientation and adaptive achievement behavior in their volleyball practice session will not be moderated by their perceived ability. Specifically, there will be a positive relationship between mastery goal orientation and adaptive achievement regardless of their perceived ability.

4. The relationship between their ego goal orientation and adaptive achievement behavior in their volleyball practice session will be moderated by their perceived ability. Specifically,

a) For those with high perceived ability, there will be a positive relationship between their ego goal orientation and adaptive achievement behavior.

b) For those with low perceived ability, there will be a negative relationship between their ego goal orientation and adaptive achievement behavior.

The rationale underlying 3) and 4) relates to the motivation research findings which suggest that individuals who are high on mastery goal orientation are likely to engage in adaptive behaviors regardless of the level of one's perceived ability, since the emphasis is on developing one's abilities and learning new skills and not on demonstrating superior ability. Individuals who are high on ego goal orientation however, are likely to engage in different achievement behavioral patterns depending on one's level of perceived ability. Adaptive behaviors are generally predicted for individuals who are high on ego goal orientation so long as their perceived level of ability is high. However, if one is high on ego goal orientation but has doubts about one's ability (i.e. low perceived ability), a nonadaptive behavioral pattern is expected.

Relationship between Perceived Motivational Climate and Adaptive Achievement Behaviors

For junior high school youth participating in the interschool volleyball league, it is hypothesized that:

1. There will be a positive relationship between their perceived mastery climate and adaptive achievement behavior during their volleyball practice session.

2. There will be no relationship between their perceived ego climate and the adaptive achievement behavior during their volleyball practice session.

The rationale underlying 1) and 2) relates to the research findings which suggest that individuals who perceived a mastery climate as salient within their sport context tend to engage in adaptive patterns of behavior. However, for individuals who perceived an ego climate as salient within their sport context, differential behavioral patterns are expected. The influence of a perceived ego climate on one's adaptive achievement behaviors is moderated by one's perceived ability.

It is further hypothesizes that:

3. The relationship between their perceived mastery climate and adaptive achievement behavior in their volleyball practice session will not be moderated by their perceived ability. Specifically, there will be a positive relationship between perceived mastery climate and adaptive achievement behavior regardless of their perceived ability.

4. The relationship between their perceived ego climate and adaptive achievement behavior in their volleyball practice session will be moderated by their perceived ability. Specifically,

a) For those with high perceived ability, there will be a positive relationship between their perceived ego climate and adaptive achievement behavior.

b) For those with low perceived ability, there will be a negative relationship between their perceived ego climate and adaptive achievement behavior.

The rationale underlying 3) and 4) relates to the motivation research findings, which suggest that individuals who perceived a mastery climate as salient within their

sport context, are likely to engage in adaptive behaviors regardless of the level of one's perceived ability. Adaptive behaviors are also generally predicted for individuals who perceive their sport context to be an ego climate, so long as their perceived ability is high. However, if one perceived an ego climate to be salient (contexts which place emphasis on interpersonal competition and social comparison) and doubt about one's ability exists (that is, low perceived ability), a nonadaptive behavioral pattern is expected.

The theoretical model for the hypotheses of this study is presented in Figure 2.

Relationships Between Goal orientation, Perceived Motivational Climate, and Adaptive Achievement Behaviors

Motivation research that has progressed along two main tracks, namely, personal disposition and situational influences, has generally suggested that both goal orientation and perceived motivational climate were related to adaptive achievement behavior. To determine whether goal orientation or perceived motivational climate was more strongly related to adaptive achievement behavior, the following specific questions which compared the strength of relationships of goal orientation and perceived motivational climate with adaptive achievement behavior were addressed.

For junior high school youth participating in the interschool volleyball league,

1. Is the relationship between their mastery goal orientation and their adaptive achievement behavior stronger than the relationship between their perceived mastery climate and their adaptive achievement behavior?

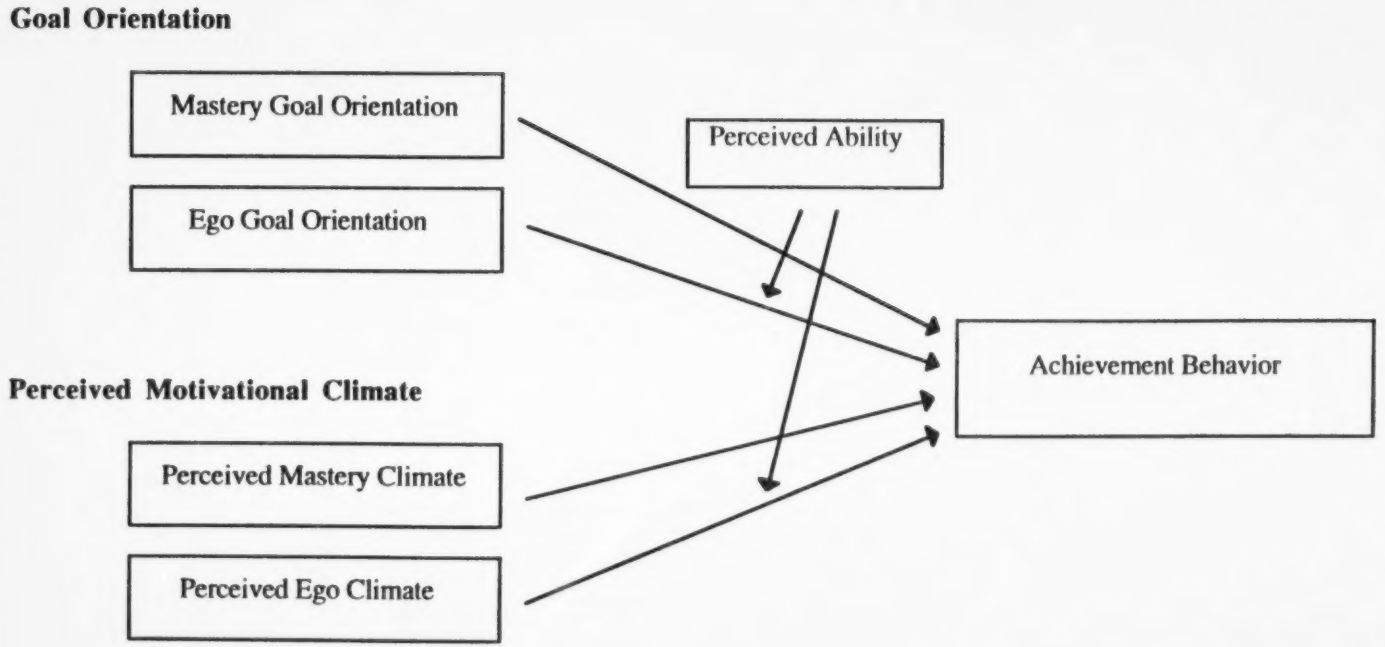

Figure 2. Theoretical model for the hypotheses of this study: Relationships between achievement behavior, goal orientation, perceived motivational climate and perceived ability.

2. Is the relationship between their ego goal orientation and their adaptive achievement behavior stronger than the relationship between their perceived ego climate and their adaptive achievement behavior?

3. For those with high perceived ability, is the relationship between their mastery goal orientation and their adaptive achievement behavior stronger than the relationship between their perceived mastery climate and their adaptive achievement behavior?

4. For those with low perceived ability, is the relationship between their mastery goal orientation and their adaptive achievement behavior stronger than the relationship between their perceived mastery climate and their adaptive achievement behavior?

5. For those with high perceived ability, is the relationship between their ego goal orientation and their adaptive achievement behavior stronger than the relationship between their perceived ego climate and their adaptive achievement behavior?

6. For those with low perceived ability, is the relationship between their ego goal orientation and their adaptive achievement behavior stronger than the relationship between their perceived ego climate and their adaptive achievement behavior?

CHAPTER TWO - LITERATURE REVIEW

This chapter aims to provide information on the theoretical framework of the achievement goal approach and to report research findings upon which this present study is based. Initially, the achievement goal perspective theory is reviewed to provide insights into the major variables that influence one's goal of action, which in turn influences one's achievement behavior. Studies that have been conducted to examine the theoretical predictions of the achievement goal perspective theory on the relationships between goal perspectives and achievement behaviors are reviewed.

Motivation and Achievement Behavior

Motivation refers to "those personality factors, social variables, and/or cognitions that come into play when a person undertakes a task at which he or she is evaluated, enters into competition with others, or attempts to attain some standards of excellence" (Roberts, 1992, p.5). At such times, the circumstances are assumed to engage and facilitate various cognitive assessments and/or motivational dispositions that influence human behavior in achievement situations. In sport, achievement behaviors which motivation theories purport to explain, have typically been defined as persistence (continuing to try hard), choice of action possibilities, behavioral intensity (trying hard), and performance (outcomes). They are the behaviors observed when participants try harder, persist longer, choose to practice longer, perform better, concentrate more, and join or withdraw from sporting activities. These represent assessments of achievement behavior from which we infer one's motivation (Roberts, 1992).

Various theoretical approaches and models explaining motivation and achievement behavior have been proposed. However, a more recent and dominant approach in sport is the social cognitive approach. Drawing from past theories, this approach portrays motivation as a dynamic process. It presents a model of causation, in which determinants such as environmental events, personal elements, and behavior operate and interact. It incorporates sets of affective, cognitive, and value-related variables that are assumed to influence one's choice and attainment of achievement goals.

Recent research stemming from a social cognitive approach has indicated that an examination of individual differences in goal perspectives provides insight into affective and cognitive responses as well as behavioral variability in sport. This approach, known as the achievement goal approach, examines goal-directed behavior, which includes how individuals approach, engage in, and respond to achievement activities and why they engage in adaptive or nonadaptive achievement behaviors.

Adaptive achievement behaviors are motivated behaviors that promote the likelihood of achievement (Roberts, 1992). These behavioral patterns involve a range of affective, cognitive, and metacognitive processes that promote the initiation and maintenance of achievement activity. Characterized by challenge-seeking and task persistence even in the face of difficulty and/or failure, these adaptive behavioral patterns are likely to contribute to long-term participation in learning (Ames, 1992; Dweck, 1986). On the other hand, nonadaptive patterns of behaviors are defined as the behaviors that do not promote effective strategies for achievement (Roberts, 1992). These behaviors, characterized by challenge-avoidance and a lack of persistence in the face of failure,

difficulty or both, may eventually lead to withdrawal from sport participation (Ames, 1984; Duda, 1992; Dweck, 1986).

The Achievement Goal Approach

Drawing from the independent and collaborative theoretical and empirical work of Ames (1987, 1992), Maehr (Maehr & Braskamp, 1986), Nicholls (1984b, 1989, 1992), and Dweck (1986), it is argued that to understand motivation and the achievement behavior of children, both the function and the meaning of behavior within the setting must be taken into consideration. According to the achievement goal approach, individuals in achievement contexts strive to demonstrate ability (Dweck, 1986; Nicholls, 1984b, 1989). However, conceptions of ability in achievement situations are assumed to be embedded within two major achievement goal perspectives, namely, mastery and ego goal perspectives (Ames, 1992; Dweck, 1986; Nicholls, 1984b, 1989). As purported by the achievement goal approach, success and failure in demonstrating one's ability are defined in psychological states, which are not necessarily equivalent to performance outcomes. Success and failure can only be recognized in terms of an individual's goal perspective; what is success for one individual, may be failure for another (Roberts, 1992).

Mastery and Ego Goal Perspectives

The first achievement goal perspective, labeled as mastery goal by Ames (1992)

and Roberts (1992), task involvement by Nicholls (1984b, 1989), or learning goal by Dweck (1986; Dweck & Leggett, 1988), is to demonstrate mastery of a task, acquire skills, and to do one's best. This goal drives achievement behavior in situations where improvement, mastery, or learning is deemed important. From this goal perspective, assessment of ability is based on improvement in learning, performance, and/or mastery. Success or failure is thus dependent upon the subjective assessment of whether one improved, learned, or achieved mastery. For the purpose of this study, this goal perspective will be referred to as the mastery goal perspective.

The second achievement goal perspective, referred to as ego involvement by Nicholls (1984b, 1989), competitive goal by Roberts (1992), ability focused goal by Ames (1992), and performance goal by Dweck (1986; Dweck & Leggett, 1988), is to strive to demonstrate superior ability in comparison to relevant others. This goal drives achievement behaviors in situations where interpersonal competition or social comparison exists. From this perspective, ability assessments or one's success or failure, are judged in relation to the ability of relevant others (Roberts, 1992). For the purpose of this study, this goal perspective will be referred to as the ego goal perspective.

In the achievement goal approach, although each theorist might have his or her preferred nomenclature, conceptual nuances, and issues of emphasis, theoretical frameworks show commonality with respect to the conception and role of goal perspectives in human motivation, and how the adoption of different goal perspectives affect achievement behaviors. In general, the approach has provided much insight into the mechanisms of achievement behavior as well as into the means for enhancing achievement

striving. In particular, the approach has identified important variables that contribute to the variance in achievement behaviors among sport participants. Based on the work of Ames (1984), Dweck (1986), Duda (1987), Maehr (Maehr & Braskamp, 1986) and especially Nicholls (1984a, 1984b, 1989), Roberts (1992) has identified three important variables that influence one's achievement behavior: goal orientation, perceived motivational climate, and perceived ability.

Roberts (1984a, 1984b) and Duda (1987) have argued for the usefulness of Nicholls' cognitive developmental-based theory of achievement motivation as an appropriate framework from which to study youth sport behavior. As noted by Duda (1987), Nicholls' (1984a, 1984b) theory of achievement not only incorporates contemporary perspectives about the role of self-related cognitions to motivated behavior, but also addresses relevant developmental considerations as they impact children's cognitive processes. A particularly important tenet of Nicholls' (1984a, 1984b) theory relates to individual differences in the subjective meaning of ability. Many theoretical approaches to understanding motivation and achievement behavior have assumed a uniform definition of ability, that is, how much ability an individual has relative to others. However, Nicholls (1984a, 1989) argues that not one but two conceptions of ability manifest themselves in achievement contexts: task-involved criterion of ability and ego-involved criterion of ability.

The first conception, task-involved criterion of ability, exists when an individual's behaviors are targeted towards improving, mastering, or perfecting a task or skill (Nicholls, 1984a). This individual has a self-referenced standard of success in which he or

she experiences feelings of ability as a consequence of personal improvement or mastery. The second conception of ability, the ego-involved criterion of ability, is based upon a social comparison process (Nicholls, 1984a). Here, the individual assesses his or her ability relative to that of relevant others; ability is viewed as performing better than others. Thus, according to Nicholls, behavioral patterns reflect the motive to demonstrate ability, but are influenced by these underlying differences in the subjective meaning of ability, or how ability is construed in achievement settings.

Critical to Nicholls' (Nicholls & Miller, 1984) developmental theory of achievement motivation, is the assumption that the concept of ability has different meanings to individuals at different stages of development. In Nicholls' theory, the development of achievement goals is closely related to the development of the concept of ability. In particular, he suggests that success and failure, which can only be recognized in terms of one's goal perspective (that is, mastery or ego), relate to a more or less differentiated conception of ability. The criteria individuals use to determine their level of ability varies as a function of age (Nicholls, 1984b). Based on his developmental work with children, Nicholls (1984b, 1989) concluded that the development of the concept of ability is a process of differentiating the concepts of effort, luck, and task difficulty from ability.

According to Nicholls (1984b, 1989, 1992; Nicholls & Miller, 1983, 1984), young children of ages 2 to 4 determine task difficulty by subjectively evaluating their own expectations of success; "hard" is equivalent to "hard for me". Perceptions of high ability are mastery-based and linked to improved performance or success on tasks of varying

subjective difficulty. When children are slightly older, at about 5 to 6 years of age, perceptions of task difficulty are based on the objective features of the task (e.g. the complexity of the task). Perceptions of high ability are linked to success on objectively difficult tasks. When more effort is needed for success, these children imply more learning, which is more ability. Thus, to young children, people who try harder are perceived as having higher ability; effort is ability. At about 8 years of age, children then start to develop the understanding that task difficulty and ability are best judged with reference to the performance of others. Perception of high ability is now linked to successful outcomes on normatively difficult tasks. However, for these children, the concept of ability and effort continues to be confounded. Effort, rather than ability, is seen as the primary cause of outcomes. Therefore, equal effort is expected to result in equal performance outcomes. The concepts of effort and ability are not completely differentiated until about 12 years of age, when children develop the mature conception of ability as capacity. Viewed from this perspective, although effort can influence performances, its effect on performance is limited by ability. At this level of differentiation, children recognize that tasks that only a few peers can perform are judged as being more difficult and as requiring higher ability. As such, for one to be judged competent, one must perform better than others with equal effort or achieve equal performance without trying as hard.

Nicholls (1989) suggests that young children with an undifferentiated conception of ability tend to approach achievement situations with a mastery goal perspective. With this goal perspective, children place emphasis on accomplishing, mastering, or learning,

and assessments of ability are self-referenced. As such, Nicholls (1989) indicates that the use of the undifferentiated conception of ability tends to foster one's sense of competence and accomplishment, regardless of whether one perceives his or her ability as low or high in relation to others. However, with a mature differentiated conception of ability at about 12 years of age, children recognize that ability is best judged in relation to others. These children can approach achievement situations with an ego perspective. With this goal perspective, a child's improved personal performance is no longer a sufficient basis for perception of high ability. The child may experience feelings of incompetence if he or she cannot perform better than others with equal effort, or achieve equal performance without trying as hard.

The nature of one's understanding of the concept of ability, however, does not determine one's goal perspective in any given situation (Nicholls, 1984b, 1990, 1992). Nicholls noted that after the age of 11 or 12, though individuals are capable of construing ability as capacity, there is still variation among individuals in the degree to which superior ability is used as the criterion to evaluate success. Thus, Nicholls (1984b, 1990) indicates that individuals who can judge their performance and ability from a mature conception of ability do not always do so. According to Nicholls (1984b; Nicholls & Miller, 1984), the goal perspective one adopts in a particular situation not only varies as a function of age, but also as a function of personal disposition and situational factors, namely, one's goal orientation and perceived motivational climate, respectively.

Goal orientation. The goal perspective one engages in a particular situation depends on the development of "individual differences in proneness to the different types of involvement" (Nicholls, 1989, p.95). Nicholls (1989) indicated that past involvement in predominantly mastery or ego goal oriented situations can influence the development of a mastery or ego goal orientation. Thus, one's goal orientation is thought to be dependent on one's childhood socialization experiences; individuals are reinforced for certain choices, assessed on different aspects of their behaviors, and become oriented to certain types of activities more than others.

The work of Ames (1987, 1992) complements and further emphasizes the work of Nicholls (1989). Ames (1987, 1992) suggests that the socialization process is influenced by the psychological climates created by parents, coaches, and teachers. By giving certain rewards, or by providing cues or explicit expectations, the adults structure the motivational climate so that an ego or mastery goal conception of ability becomes the criterion by which performance is assessed. For example, when a child returns from a weekly game of soccer and a parent asks, "Did you win?", the parents' goal preferences become manifest and the child, perceiving the goal structures and the explicit criteria by which his or her performance is being evaluated, then acts accordingly (Ames, 1992). In this way, the goal structure created by significant others results in the adoption of goal perspectives that are based upon the conception of ability manifest in the setting. Thus, a sport participant, in recognizing that ability is evaluated in an ego or mastery oriented manner, develops goals of action consistent with the conception of ability manifest in the context. It is in this manner that individuals become socialized to develop ego or mastery

goal orientations. Thus, in achievement contexts, the motivational climate created by significant others may lead to the development of mastery or ego goal orientations (Ames, 1992; Roberts, 1992).

Perceived motivational climate. As discussed earlier, the psychological climate created by significant others has the effect of socializing individuals to develop one goal orientation or the other. However, the process of motivation is seen to be affected at yet another level (Roberts, 1992).

Nicholls (1989) indicated that the goal perspective one adopts in a particular situation also depends on the characteristics of the situation, that is, the motivational climate. Nicholls (1989) noted that after the age of 11 or 12, even though individuals are capable of judging their performance, ability, or both from a more differentiated perspective, they do not always choose to do so. A mature differentiated conception of ability tends to be engaged in situations that emphasize one's ability in relation to that of relevant others. In Nicholls' view, whether an adolescent or adult is engaged in a mastery or ego goal perspective also depends on the situation at hand. In agreement, Dweck and Leggett (1988) noted that individual differences in goal orientation "determine the a priori probability of adopting a particular goal and displaying a particular behavior pattern, and situational factors are seen as potentially altering these probabilities" (p.269). They suggest that depending on the demands of the social environment, situations may be considered more or less ego- or mastery-involving. In achievement contexts that place emphasis on interpersonal competition or social comparison, public evaluation, testing of

valued skills, and normative feedback, a more differentiated conception of ability will be used. In such situations, the ego goal perspective tends to be evoked. On the other hand, situations that place emphasis on participation, the learning process, problem solving, and individualized skill mastery will elicit attempts to demonstrate the less differentiated conception of ability. Thus, a mastery goal perspective is more likely to emerge (Ames & Archer, 1988; Nicholls, 1989).

Roberts (1992) noted that within sport settings, mastery and ego climates can and do exist. In competitive sport when winning is the criterion of success for the coach, ego climates are assumed to be created. However, competitive sport can also have a mastery climate when mastery-related cues are evident from how tasks are defined, how practice sessions are designed, and how children are recognized and evaluated. Here, instead of an emphasis on winning, improvement in skills or improvement from game to game is the coach's criterion of success. Thus, by placing emphasis on certain rewards, expectations, and cues, coaches and significant others can create a motivational climate that emphasizes either a mastery or an ego goal perspective . However, Ames (1992) emphasized that the concept of a general motivational climate is insensitive to differences in how individuals are treated and how they interpret their experiences. She noted that in most situations, individuals are not only treated differently, but they also often differ in how they interpret quite similar cues. Thus, in any situation, the value of a particular goal is influenced by the salience of specific cues to an individual. In a particular situation, the critical factor in determining the goal perspective one adopts is the subjective meaning of the motivational climate, namely, the individual's perceived motivational climate.

In general, Roberts (1992) emphasized that the adoption of a mastery or ego goal perspective may not be important in and of itself. However, he noted that evidence from both academic and sport research (e.g. Ames, 1984; Duda, 1992; Dweck, 1986) has shown that the adoption of an ego or mastery goal perspective often results in different behavioral patterns. Generally, an adoption of a mastery goal perspective has been found to be associated with adaptive achievement behaviors. On the other hand, an adoption of ego goal perspective often results in nonadaptive patterns of achievement behavior by some individuals (Roberts, 1992). An explanation for this rests on the role played by another important motivational variable, one's perception of ability.

Perceived ability. Most motivational theories suggest that perceived ability is an important predictor of performance and participation behavior (Weiss, 1987; Weiss & Chaumeton, 1992). However, according to theory of goal perspectives (Nicholls & Miller, 1984; Roberts, 1984b, Roberts & Duda, 1984), it has been argued that the individual's perception of ability is an important moderator of the relationship between goal perspectives and achievement behavior for some individuals. Specifically, it is hypothesized that if one adopts a mastery goal perspective, then one is likely to engage in adaptive behaviors, regardless of the level of one's perceived ability (Nicholls, 1989; Roberts, 1984b, 1992). In this case, the perception of ability (whether high or low) becomes irrelevant, because the emphasis is on developing one's abilities and learning new skills, and not on demonstrating superior ability. As such, these individuals are more likely to exert maximal effort, select moderately challenging tasks, perform up to their

potential, and persist in achievement situations. However, adoption of an ego goal perspective is predicted to have differential effects on one's behavior, depending on one's perception of ability. Adaptive achievement behaviors are expected to be exhibited by individuals who adopt an ego goal perspective and who perceive their ability to be high (Duda, 1989a; Dweck, 1986; Roberts, 1992). However, nonadaptive behaviors are predicted for individuals who adopt an ego goal perspective but who perceive their ability to be low (Roberts, 1992). For these individuals who doubt their ability, believing that ability is a major cause of success may result in motivational difficulties (Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1989). In these cases, it is hypothesized that in an attempt to prevent demonstrating low ability, these individuals may stop exerting effort and may choose tasks that are too easy or too hard in order to avoid challenge (Dweck, 1986), thus engaging in nonadaptive behaviors.

The proposed interrelationships between goal perspectives, perceived ability and achievement behavior are based on the work of Dweck (1986), Nicholls (1989) and Maehr (1984). Duda (1992) states that an important tenet in recent theorizing on achievement is that one's goal perspective will influence how one perceives and responds to achievement events. Specifically, it is suggested that an individual's goal perspective will affect self-evaluations of demonstrated ability, of effort expended, and also of attributions for success and failure. These cognitions, in turn are assumed to have an effect on achievement-related affect, strategies, and subsequent achievement behaviors such as task choice, effort, performance, and persistence. Research in both academic and sport contexts has provided support for these assumptions.

Goal Perspectives and Achievement Behavior in Sport

Motivation research related to achievement goal perspectives has neither operationally defined the construct of goal perspectives per se nor examine its influence on achievement behavior. Rather, the research has generally progressed along two main tracks. One track has focused on the relationship between individual differences in goal orientations and achievement behavior based on the assumption that goal orientation in part influences one's goal perspective, which in turn, influences one's achievement behavior. Research along this track has been directed at developing measures of mastery and ego goal orientations and has investigated the behavioral and cognitive correlates of different goal orientations. In sport, the research directed at developing measures of goal orientations has been promising (Roberts & Treasure, 1992). Measures that have been specifically developed to assess individual differences in mastery and ego goal orientation in the athletic context are the Task and Ego Orientation Scale Questionnaire (TEOSQ) (Duda & Nicholls, 1992), Sport Orientation Questionnaire (SOQ) (Gill & Deeter, 1988), and the Perception of Success Questionnaire (POSQ) (Roberts & Balague, cited in Roberts & Treasure, 1992). Although research is still needed to determine the psychometric properties of these measures across a range of age and competitive level groups participating in sport, evidence for the validity and reliability of the TEOSQ (Duda, 1992) has been accrued in studies of youth, high school and college age athletes and nonathletes, and recreational sport participants (Duda, 1989b; Duda & Nicholls, 1992; Duda & White, 1992; White and Duda, 1994). Evidence to indicate that the constructs of task and ego goal orientation are orthogonal has also accrued (e.g. Duda,

1989b, 1992; Duda & White, 1992; White and Duda, 1993, 1994). The development and validation of these goal orientation measures have enabled research to investigate the behavioral and cognitive correlates of different goal orientations. Research in this tradition has provided evidence that different goal orientations are associated with different patterns of cognition and affect, which in turn, are likely to result in adaptive or nonadaptive achievement behaviors.

The other main research track has focused on the influence of motivational climate on achievement behavior based on the assumption that perceived motivational climate in part influences one's goal perspectives, which in turn, influences one's achievement behavior. A sport-specific measure known as the Perceived Motivational Climate in Sport Questionnaire (PMCSQ) (Seifriz, Duda & Chi, 1992) has been developed to measure individuals' perceived motivational climate. The development and validation of this measure has enabled research to investigate and examine how the structure and demands of a learning environment can evoke different motivational and behavioral patterns.

In general, research has addressed the influence of individual differences in goal orientation and perceived motivational climate on the adoption of a mastery or an ego goal perspective, which in turn, are likely to influence individuals' achievement behavior in sport. Much research in the context of academic achievement has provided support for the predictions of behavior consistent with the achievement goal held (Ames, 1987, 1992; Dweck, 1986; Nicholls, 1989, 1992). However in the sport context, only in recent years has work been undertaken to provide support for the link between goal perspectives and

achievement behaviors and for the underlying assumptions of the social cognitive theories of achievement motivation. In general, both preliminary correlational and experimental findings have provided evidence in the sport domain to support the theoretical predictions between goal perspectives and adaptive achievement behavior.

Goal Perspectives and Adaptive Achievement Behavior

The critical test of any achievement motivation theory is its ability to predict behavior (Duda, 1992). In recent years, research in sport has also been conducted to examine the theoretical predictions of the relationship between goal perspectives and adaptive achievement behaviors. In sport, adaptive achievement behaviors that have been assumed to reflect an individual's state of motivation include performance, task choice, exerted effort, and persistence (Duda, 1992; Maehr, 1984; Maehr & Braskamp, 1986; Roberts, 1992). The following section is a brief review of sport studies that have focused on the relationships between goal perspectives and adaptive achievement behaviors of performance, task choice, exerted effort, and persistence. These studies have either focused on the relationships of goal orientations or perceived motivational climate with adaptive achievement behaviors.

Goal perspectives and performance. The field of sport psychology has focused much of its research on the predictors of sport performance. At present, however, only a few investigations have been conducted to examine the relationship between goal

perspective and performance. These have mainly focused on the influence of motivational climates on performance.

Hall (as cited in Duda, 1992) conducted an experimental study to examine the effects of mastery and ego climates, perceived ability, and success/failure feedback on performance. Perceived ability was manipulated by giving the subjects fictitious feedback that they had performed well or poorly following a baseline measure of performance. The subjects were then randomly assigned to either an ego climate (in which personal performance and normative feedback were provided) and a mastery climate (in which only personal performance feedback was provided) condition. Each subject was then asked to achieve a goal of 60% improvement over the baseline for the next six trials. Fictitious feedback was given at the end of the second, fourth, and sixth trials. Consistent with the theoretical predictions of achievement motivation theories (Dweck & Leggett, 1988; Nicholls, 1989), the results revealed significantly poorer performance for subjects with low perceived ability who performed in the ego climate condition than those with low perceived ability who performed under a mastery climate condition.

Burton (1989) and Burton (as cited in Duda, 1987) also found a correspondence between one's goal perspective and performance in sport. Specifically, the findings revealed that intercollegiate swimmers who were placed in a mastery-based goal-setting training program not only showed greater performance improvements than the control group, but also tended to exhibit adaptive achievement behaviors with respect to exerted effort and optimal task choice. Lerner & Locke (1995) also reported similar findings on the positive relationship between mastery goal and performance on a sit-up task.

The above findings support the contemporary social cognitive theory of achievement motivation (Dweck & Leggett, 1988; Nicholls, 1984, 1989).

Goal perspectives and task choice. To date, few investigations have examined the relationship between goal perspectives and task choice in the physical domain (Duda, 1992; Weiss & Chaumeton, 1992). In a field study conducted by Solmon and Boone (1993) in physical education classes, a contract grading system was employed to yield an indication of college students' selection of challenging tasks. The contract system consisted of 23 items varied in level of skill difficulty. It was found that students who were high on mastery goal orientation selected more challenging tasks as reflected by their choice of contract items. On the other hand, ego goal orientation was found to be associated with selection of less challenging tasks. This finding is consistent with previous work in academic domain (Ames & Archer, 1988; Elliott & Dweck, 1988).

Goal perspectives and effort exerted. Exerting effort, particularly in the face of difficulty or failure, is certainly a critical ingredient to improvement, or to ultimate performance. To date, few studies have looked at the relationship between goal perspectives and exerted effort in the physical domain (Duda, 1992; Weiss & Chaumeton, 1992). However, the research conducted to examine the relationships between goal orientation, perceived motivational climate, and achievement behaviors generally supports the theoretical predictions of Dweck (1986), Nicholls (1989) and Roberts (1992), that a

mastery goal perspective tends to correspond with greater perseverance and maximal exertion of effort.

Studies conducted by Duda (1988), involving a total of 67 male and 67 female undergraduates found that among these intramural sport participants, those that were high in mastery orientation generally reported that they practiced their sport more in their spare time. Another study of athletes by Duda, Smart, and Tappe (1989) examined the predictors of adherence to injury rehabilitation. For athletes who had sustained a sport related injury, those high in mastery orientation tended to work harder and push themselves during exercise sessions. On the other hand, those low in mastery orientation tended to just simply go through their exercise protocol. They were also found to be less likely to adhere to their injury rehabilitation.

An association between a mastery climate and exerted effort was reported by Seifriz et al. (1992) and Papaioannou (1995). These researchers found that subjects' perception of a mastery climate was positively related to their reported exerted effort. Vallerand, Gauvin and Halliwell (1986) found that young boys who were previously assigned to an ego climate condition spent significantly less time on task during a free-choice period than those placed in a mastery climate condition. The relationship between exerted effort and motivational climate was also examined in the physical education context. Solmon (1995) conducted an experimental study which involved 109 seventh and eighth grade students enrolled in physical education classes. The subjects participated in two 30-minutes lessons on juggling under either a mastery climate or ego climate condition. Consistent with previous findings, Solmon (1995) found significant

differences in students' exerted effort as a function of the experimental condition. Using analysis of subjects' actual practice trials, Solmon (1995) found that individuals in the mastery climate condition exerted a greater amount of effort (measured by number of trials per minute) on challenging tasks than those in an ego climate condition. Solmon (1995) reported that these findings were also supported by the interviews with the four teachers involved. When interviewed, all the teachers reported that in the mastery climate condition, both high and low skilled students practiced hard during class. One teacher added that some of the students even went home and practiced the juggling skill. However, for the ego climate condition, the teachers reported that only students that were high skilled kept practicing and trying to improve. Students that were experiencing difficulty displayed maladaptive behaviors. The teachers reported that these students, unless they were specifically monitored, did not seem to practice but did other things instead.

Goal perspectives and persistence. Literature in the field of sport psychology generally shows that withdrawal from sport is linked to low perceived ability and less enjoyment experienced (e.g., Burton & Martens, 1986; Whitehead, 1993). To date, the predictions have been supported by correlational studies which show a positive relationship between mastery perspective and persistence in practice and sport participation, and a negative relationship between ego perspective and continued participation in sport (Duda, 1992). These studies have examined the relationships

between goal orientations and persistence, and also between motivational climate and persistence.

A laboratory experiment examined the effects of goal-setting conditions on children's persistence on tasks in practice (Rudisill, Meaney, McDermott & Jibaja-Rusth, as cited in Duda, 1992) Specifically, nine- through twelve-year-old children were requested to perform three different motor tasks (i.e., throwing for accuracy, standing long jump, sit and reach) under one of four experimental conditions (i.e. mastery-goal, ego-goal, self-goal and a control group). In this study, persistence was defined as the time the children spent practicing the motor skills during a free-time period following the test trials. Findings revealed that children who were assigned to the mastery climate condition persisted longer at the tasks (namely, long jump and flexibility tasks) than those assigned to the other three goal-setting conditions. Vallerand, Gauvin, and Halliwell (1986) found similar findings. They found that young boys spent significantly less time on task in a free-choice period if they were previously assigned to an ego climate condition (i.e., emphasis placed on beating other children's scores), in contrast to a mastery climate (i.e., emphasis placed on trying one's best) condition.

A specific study by Duda (1989a) examined the relationship between goal orientation and persistence in sport participation. Findings revealed that of the 871 high school students, those who were presently involved in sport were higher on mastery goal orientation than those who had withdrawn from sports or had never been involved. In addition, dropouts were found to be most troubled by a sport failure experience in which

the individual displayed lower ability in relation to the peers. Thus, there appears to be a negative relationship between persistence and ego goal orientation.

The relationship between goal orientation and persistence, however, was not significant in a recent field study conducted by Solmon and Boone (1993) with college students in physical education tennis classes. To record data concerning students' in-class behavior related to persistence and effort, Solmon and Boone (1993) implemented a contract points system in which students tried to earn the maximum number of points on each contract item. The total contract points earned was used to reflect effort and persistence in class. The data was collected by having observers attend the classes and check off the contract items as students were able to successfully complete the tasks. The observers also recorded all points students earned toward their contracts. Findings revealed that points earned towards the students' contract failed to contribute significantly to the relationship between goal orientation and student in-class behavior related to effort and persistence. A possible explanation offered by the researchers was that the makeup of the in-class behavior could have been confounded with another independent variable under study, namely, selection of challenging tasks. Specifically, they explained that students who were high on mastery goal orientation could have chosen more difficult contract items and demonstrated effort and persistence in class but have been unable to earn the maximum number of possible points on the challenging options they selected. On the other hand, students high in ego goal orientation could actually have accumulated more points with less effort because they selected easier contract items. As such, the points earned may not have accurately reflected students'

effort and persistence in class. In addition to the explanation provided by Solmon and Boone (1993), the makeup of the in-class behavior seemed to be an indicant of the students' performance on contract items rather than their effort and/or persistence. Solmon and Boone (1993) recommended that to further understand the relationship between goal orientations and in-class achievement behavior of effort and persistence, future research should utilize a more precise measure of student behavior during class (Solmon & Boone, 1993).

To date, few studies (e.g., Causgrove, 1993; Causgrove & Watkinson, 1994; Solmon, 1995; Solmon & Boone, 1993) have examined the relationships between goal orientations, perceived motivational climate and actual in-class achievement behaviors. Indeed, more work is needed in this line of inquiry. To provide further support for the theoretical predictions on the influence of goal orientation and perceived motivational climate on goal perspectives, which in turn influences achievement behaviors, future research needs to use appropriate measures to gather data on students' or participants' achievement behaviors in natural classes or practice settings.

Measure for Achievement Behavior in Sport Settings

Systematic observation has been widely used in education and sport settings for the collection of data. In the search for reliable and valid methods for determining teacher effectiveness and student achievement, the use of a concept called academic learning time (ALT) resulted. The ALT concept, though originally developed to study teaching effectiveness in classroom situations has been adapted by physical education

researchers for use in activity settings. ALT has been defined as the portion of engaged time when the student is involved with relevant subject matter at a high success rate (Siedentop, Tousignant & Parker, 1982). In physical education settings, this portion of engagement with the subject matter at a high success rate is measured through the use of the Academic Learning Time in Physical Education (ALT-PE) systematic observation instrument (Siedentop et al., 1982) (see Appendix A). Studies have shown that the ALT-PE instrument provides valid and reliable data when used by trained observers.

The purpose of the ALT-PE instrument is to measure the portion of time in a physical activity lesson that a learner is engaged in motor activity related to improvement in performance. ALT-PE is a two level, hierarchical decision system. The first level of the system requires the observer to first note the context of the lesson and record the data. The second level in the decision sequence requires the observer to note the learner's involvement within the context of the lesson. The context level category includes three behavior categories: (a) general content, (b) subject matter knowledge, and (c) subject matter motor. The learner involvement categories include (a) not motor engaged and (b) motor engaged. Thus, the system is capable of providing data which describe both the type of motor activity in which selected learners are involved and the context in which it occurs. These data are typically expressed as a percentage of total intervals and since each interval represents a measure of time, total time per category can also be estimated (Siedentop et al., 1982)

The ALT-PE instrument, typically using an interval recording technique, has been used by researchers to provide descriptive data in a variety of contexts. Studies have

been conducted to provide descriptions of behaviors of pupils at the elementary, secondary, junior and senior high, and college level (e.g., Beauchamp, Darst & Thompson, 1990; Silverman, Dodds, Placek, Shute & Rife, 1984); of students with special needs (e.g., Paese, 1982; Silverman et al., 1984); of low and high expectancy students (e.g., Cousineau & Luke, 1990) and of high and low skill level players. The instrument has also been used in correlation studies. In these studies, the focus has been on the search for variables that relate to academic learning time in physical education, such as, student skill level, regular and special needs students, type of practice, and teaching efficacy beliefs (Thompson, 1988).

In recent years, the ALT-PE instrument has also been modified and used in physical education and activity settings to examine the relationships between motivational factors and the participation behaviors of children with movement difficulties (Causgrove, 1993; Causgrove & Watkinson, 1994). This work, currently in progress, has demonstrated that the ALT-PE instrument can be modified and used to measure achievement behaviors in natural sport settings. More specifically, the ALT-PE instrument can be modified for use in collecting information on the amount of time in which a player is observed to be involved in activities designed to improve his or her motor skill performance (e.g., where the player is engaged with high degree of success, or is engaged but not successful or is having difficulty, is watching or listening to instruction and/or demonstration). The data collected with interval recording on an individual's involvement in such activities would represent the amount of time the player was engaged in adaptive achievement behaviors (e.g. where participants try hard, pay more attention,

persist in tasks and practice, perform well and concentrate on tasks). On the other hand, the amount of time in which a player is observed to be involved in activities not leading to the achievement of motor skill performance (e.g. where the player is engaged in the wrong activity for the assigned task, or is off-task, deviant or not paying attention when given the opportunity to improve his or her motor skill performance) represents engagement in nonadaptive behaviors. As such, the ALT-PE instrument can be used to measure adaptive and nonadaptive achievement behaviors in natural sport settings.

Synthesis of the Literature

In summary, there is empirical support to show that an examination of individuals' goal perspectives, which includes how they approach, engage in, and respond to achievement activities, can provide insight into behavioral variability in sport. Research examining achievement motivation in sport has addressed the influence of individuals' dispositional goal orientation as well as perceived motivational climate on the adoption of a mastery or an ego goal perspective, which in turn are likely to influence individuals' achievement behavior. In general, adaptive achievement behaviors have been found to be associated with mastery goals. In line with theoretical predictions, empirical findings suggest that when an individual adopts a mastery goal perspective, the individual's perception of ability at a specific task or activity, and the perceived demands of the task, are self-referenced. Since the individual's focus is on improving or mastering a specific task or activity, then the individual is less likely to experience an imbalance between perceived ability and the demands. As a result, individuals adopting a mastery

perspective tend to display adaptive behaviors, characterized by challenge-seeking and task persistence even in the face of failure and difficulty. On the other hand, individuals who adopt an ego goal perspective tend to engage in adaptive achievement behaviors, as long as they have the confidence in their level of ability. However, for those who adopt an ego goal perspective but have doubts about their ability, they are likely to downplay the role of effort, especially when faced with difficulty or failure, or placed in situations where winning and being the best performer seemed unlikely. In such situations, nonadaptive behaviors such as avoiding challenges and reducing effort and persistence are evident.

Though research findings have generally provided support for the theoretical predictions for the hypothesized relationships between an individual's goal orientation, perceived motivational climate, self-perception of ability, and achievement behavior in sport, few studies have incorporated into one study all three major variables of achievement behavior. In addition, the empirical evidence reported thus far has relied mainly on self-report measures rather than on direct observation of actual behavior (Solmon, 1995), and few studies have examined these theoretical predictions in a natural sport setting. Currently, there is work in progress, conducted to extend the achievement motivation research not only by combining the three identified major variables into one study, but also by using direct observation, to measure participation behaviors of children with movement difficulties in physical education and activity settings (e.g., Causgrove, 1993; Causgrove & Watkinson, 1994). However, there is a need to further examine the

theoretical predictions between these variables in a natural youth sport setting using direct observation of actual achievement behavior. This will allow for better understanding and prediction of motivated behaviors, which are critical to sport psychologists, educators, and coaches for theoretical purposes and for the purpose of enhancing participation, increasing motivation, and improving performance in sport.

CHAPTER THREE - METHODS

Subjects

Subjects for the study consisted of junior high volleyball players involved in interschool volleyball league games from 12 teams of the Edmonton Public Schools in the south zone area. The total sample of 68 subjects consisted of 30 males and 38 females who volunteered and provided informed consent (See Appendix B). The mean age for the total sample was 13.2 years.

Measures

Goal Orientation in Volleyball

Goal orientation in volleyball was measured using the Task and Ego Orientation in Sport Questionnaire (TEOSQ) (Duda & Nicholls, 1992). The questionnaire consists of 13 items, seven items measuring mastery goal orientation and six items measuring ego goal orientation (see Appendix C). The stem "I feel most successful in volleyball when..." preceded each item and players responded to the items on a 5-point Likert type scale ranging from strongly disagree (1) to strongly agree (5). Evidence for the validity and reliability of the TEOSQ has been reported by Duda (1992), Duda and White (1992), and White and Duda (1993). Specifically, the instrument was found to be comprised of two independent scales, a mastery and an ego scale. The internal reliability for the two scales reported in the form of Cronbach's coefficient alpha (Cronbach, 1951) range from .74 to .86, and .75 to .90, for mastery and ego goal orientation scales, respectively.

Perception of Motivational Climate

Subjects' perceptions of the motivational climate were measured using the Perceived Motivational Climate in Sport Questionnaire (PMCSQ) (Seifriz et al., 1992). The questionnaire consists of 21 items, 12 items measuring perceived ego climate and 9 items measuring perceived mastery climate (see Appendix D). The stem "On this volleyball team..." preceded each item, and players responded to the items on a 5-point Likert type scale ranging from strongly disagree (1) to strongly agree (5). Evidence for the validity and reliability of the PMCSQ has been reported by Seifriz et al.(1992). Specifically, the instrument was found to be comprised of a mastery and ego climate scale: the internal reliability for the mastery and ego scales, reported in the form of Cronbach's coefficient alpha (Cronbach, 1951), were .80 and .84, respectively.

Perceived Ability

Previous studies on the effects of perceived ability on achievement behavior have used physical domain-specific (e.g., Fox, Goudas, Biddle, Duda & Armstrong, 1993; Harter, 1982), sport-specific (e.g., Brustad & Weiss, 1987), and task-specific (e.g., Vallerand and Reid, 1984; Rudisill, 1989) measures of perceived ability. In this study, a modification of the measure used by Vallerand and Reid (1984) was employed to assess the subjects' sport- and task-specific perceived abilities. The measure was comprised of two items asking the subjects to rate their volleyball-specific perceived ability (PAvb) and task-specific perceived ability (PAtks) on 7-point scales by answering the question "How good do you think you are in volleyball?" and "How good do you think you will

be in the activities planned for today's volleyball practice session?" respectively (see Appendix C). The two modified scales were designed to make the measure more specific to the player's perception of their ability in volleyball and the tasks planned for the observed practice session, rather than to tap a more generalized perception of ability in all physical contexts. Both scales range from 1 (I'm not good at all) to 7 (I'm very good).

To examine the moderating effects of perceived ability for volleyball and specific tasks, the PAvb and PAtks 7-point scales were dichotomized to form a high and low PAvb, and high and low PAtks subgroups. Specifically, all players who indicated 4 and below on the 7-point scale were in the low PAvb and PAtks subgroup, and those that expressed 5 and above were in the high PAvb and PAtks subgroup.

Task Difficulty

Although it was assumed that the coaches would set challenging tasks for the practice sessions, a single item on task difficulty was used to verify the assumption. Players were asked to rate the difficulty level of tasks on a 7-point scale (see Appendix D). Examining responses to this item allows the researcher to assess if observed adaptive and nonadaptive behaviors are related to the selection and avoidance of challenging tasks.

Adaptive Achievement Behavior

Adaptive achievement behaviors were measured using a modified version of the Academic Learning Time in Physical Education (ALT-PE) (Siedentop, Tousignant, & Parker, 1982) observation instrument (Appendix E). Prior to the data collection phase of

this study, videotapes of youth in volleyball summer camp instructional sessions were observed to allow for appropriate modifications to the behavioral categories of the ALT-PE observation instrument.

The observation technique used was interval recording with a 6 second observe, 6 second record format. The observe and record phases were cued using an audio cassette tape with an ear jack. During each observation interval, the coder first determined the context of what the coach had assigned the players to do (general content, subject matter knowledge, or subject matter motor). If the context was observed to be either subject matter knowledge or subject matter motor, the coder then categorized the target subject's involvement as being either adaptive or nonadaptive achievement behavior. Thus, involvement in adaptive or nonadaptive achievement behavior was observed and coded only during the portion of time when the target subject was provided with an opportunity to improve his or her knowledge and/or skill performance. Each of the two categorizations had several behaviors that might have been observed. The coder selected one behavior that best represented what the target subject was doing.

Data Collection Procedures

The Edmonton Public Junior High Schools are geographically arranged into four zones (namely, north, south, east, and west) for the purpose of competition. In this study, all the Edmonton Public Junior High School volleyball teams in the south zone were designated as the accessible population from which the sample was drawn.

The sampling process used was similar to the multi-stage sampling procedure. Stage one involved initial contact with the volleyball coaches of the Edmonton Public Junior High Schools in the south zone. The coaches were contacted during the south zone meeting and the purpose of the study was explained to them. They were informed of the data collection procedures and also of their involvement in the study. The latter included: (a) allowing the researcher to talk to players on the team in order to obtain informed consent, (b) collecting the completed informed consent from volunteer players, and (c) making arrangements for the researcher to attend a practice session or sessions to administer questionnaires and also to observe the practice session(s) in order to record behavior patterns of the subjects. The coaches were told that they would conduct the practice session(s) as they normally would, that they would not be asked to conduct any specific activities or tasks. However, it was requested that the observed practice sessions be comprised mainly of skill practices and game play, so that all observed practice sessions would be similar in terms of the structure of the practice sessions. The coaches were told that the players would be asked to participate as they normally would. The coaches received a letter that briefly explained the nature of the study (refer to Appendix F).

Stage two involved contacting the coaches within two weeks after the south zone meeting to find out if they were willing to be involved in the study. Out of a total of 11 schools, there were 12 coaches from seven schools who volunteered to be involved in the study. These were coaches of seven girls teams and five boys teams. Arrangements were

made for the researcher to talk to the players on these teams in order to obtain informed consent.

Stage three involved attending a practice session for each of the 12 teams to explain the purpose of the study and to distribute letters and consent forms to the players. The players were briefed by the researcher on the general nature of the study. They were told that the study was on the feelings youth have for their participation in sports and also what they do during their practice sessions. The players were told that if they volunteered to participate in the study, they would complete a short questionnaire at the start of a team practice and another at the end of the practice. They were told that the questions were related to their goals for participation in volleyball and also to their thoughts and feelings about their practice sessions and their ability. They were also told that one or two observers would watch the practice session and record some of the activities that the volunteer players did. They were told that each volunteer player would only be observed during one practice session. The players were told that the coach would conduct the practice sessions as he or she normally would and the players would be encouraged to behave as they normally would for the coach. The players received a letter that briefly explained the nature of the study (refer to Appendix B). The players were informed that all their responses and information would not be shown to their coaches. They were told that the information collected would be treated with the strictest of confidence and they would remain anonymous in any print material. The players were told that in order to be included in this study, each player would need to have his or her

parent or guardian sign the consent form and then give the completed form to the coach at the next team practice.

Stage four involved contacting the coaches to enquire about the number of returned consent forms. There were a total of 73 volunteer players; the number per team ranged from two to ten volunteers. For each practice session, a maximum of two subjects were observed by each observer. Thus, arrangements to observe additional practice sessions were made for teams with more than two volunteer players. Of the original 73 volunteer players, due to time constraint, only 68 were administered the questionnaire and observed during their practice sessions. These subjects were drawn from their teams using simple random sampling.

Stage five involved the administration of the questionnaires and the observation of target subjects during their practice sessions by the researcher and a trained research assistant. Prior to each practice session, information regarding the planned activities for the specific practice session was obtained from the coach. This information was then related to the target subjects just prior to the practice sessions. Just prior to their practice sessions, target subjects completed the TEOSQ and perceived ability measure. During the practice sessions, each observer coded the participation behaviors of two target subjects for the entire duration of the practice sessions, using the modified ALT-PE observation instrument. Coding started immediately after the target subjects completed the TEOSQ and perceived ability measure, and ended when players were dismissed. Duration of coding for the practice sessions ranged from 60 to 90 minutes. Immediately after the practice sessions, target subjects completed the PMCSQ.

Data Accuracy

Participation behaviors observed during the practice sessions were recorded by two trained observers. Prior to the actual data collection phase of the study, videotapes of youth in volleyball activity settings similar to those in this study were obtained. These videotapes were used for training the observers and also for establishing interobserver reliability. The training was conducted until interobserver agreement (IOA) reached 80% or above. The IOA was calculated by determining the total number of agreement, divided by the total number of agreement plus disagreement and multiplying by 100. Discrepancies in coding were reviewed with an "expert" coder and decisions for coding were established.

Prior to the actual data collection phase, a total of three IOA checks were conducted on three separate occasions. Two were conducted using a videotape and one during a 'live' instructional volleyball class session. These IOA checks resulted in an agreement of 84, 95 and 91 percent, respectively. The actual data collection phase of the study lasted four weeks. Thus two intermittent IOA checks were also conducted. The first was conducted in the second week of the data collection phase during one of the participating team's volleyball practice session. The second was conducted in the last week of the data collection phase during an instructional volleyball class session at a particular university. These IOA checks resulted in an agreement of 87 and 88 percent, respectively.

Data Analysis

The coded behavioral data were used to calculate for each student the proportion of intervals in which adaptive achievement behavior occurred and the proportion of intervals in which nonadaptive achievement behavior occurred. Due to differences in the number of intervals coded for the subjects, proportions and percentages, rather than total number of intervals, were calculated. The proportion of occurrence for adaptive achievement behavior was calculated by dividing the total number of intervals in which adaptive achievement behavior occurred by the total number of intervals in which either adaptive or nonadaptive achievement behavior occurred. Percentages of occurrence for each of the different behaviors under the two categories of adaptive and nonadaptive achievement behaviors were also calculated.

The percentage of adaptive achievement behavior for each subject reflected the portion of subject matter activities for which the subject was engaged in adaptive achievement behavior. To examine the hypothesized relationships between goal orientation, perceived motivational climate, and adaptive achievement behaviors, the correlations between these variables were calculated using the Pearson product-moment correlation. To examine the hypothesized moderating effects of perceived ability on (a) the relationship between goal orientation and adaptive achievement behavior, and on (b) the relationship between perceived motivational climate and adaptive achievement behavior, the subjects were further divided into high and low volleyball- and task-specific perceived ability subgroups. Specifically, the PAvb and PAtks scales were dichotomized to form a high and low PAvb, and high and low PAtks subgroups. The z-test using

Fisher's Zr transformation was used to test the difference between the independent correlation coefficients; to determine whether the correlations for the high and low perceived ability subgroups were significantly different.

CHAPTER FOUR - RESULTS

The purpose of this study was to examine the relationships of goal orientation and perception of motivational climate with the observed adaptive achievement behavior of junior high school volleyball youths during their practice sessions. The moderating effects of perceived ability for volleyball and for specific tasks on these relationships were also examined.

The results are divided into five sections. The first presents identified extreme values (outliers) for the goal orientation, perceived motivational climate, and adaptive achievement behavior variables. The second presents the correlations between mastery and ego goal orientation, and between perceived mastery and perceived ego climate to examine the interscale correlations relevant to previous findings. The third presents correlation coefficients and z-ratio values, testing the hypotheses which examine the relationships between goal orientation and adaptive achievement behavior, and the moderating effects of perceived ability on these relationships, respectively. The fourth section presents correlation coefficients and z-ratio values, testing the hypotheses which examine the relationships between perceived motivational climate and adaptive achievement behavior, and the moderating effects of perceived ability on these relationships, respectively. It was also of particular interest to determine whether participants' goal orientation or perceived motivational climate was more strongly related to their adaptive achievement behavior. Therefore, in the final section, the strength of the relationship between goal orientation and adaptive achievement behavior, and the strength

of the relationship between perceived motivational climate and adaptive achievement behavior are compared.

Examination of Outliers

In this chapter, the Pearson product-moment correlation coefficients (r) are used to examine the various hypothesized relationships between goal orientation, perceived motivational climate, and adaptive achievement behavior, and also the moderating effects of perceived ability on these relationships. However, Glass and Hopkins (1984) caution that the value of r can be distorted by the presence of even one or two outliers. Thus, it was deemed important to examine the data with respect to outliers for each of the goal orientation, perceived motivational climate, and adaptive achievement behavior variables, before subsequent correlation coefficient analyses are carried out to examine the hypothesized relationships between these variables.

Outliers for the goal orientation, perceived motivational climate, and adaptive achievement behavior variables were identified using the boxplot method. A total of six outliers were identified: one lower outlier for the mastery goal orientation and the perceived ego climate variables, one upper outlier for the ego goal orientation variable and three lower outliers for the adaptive achievement behavior variable. There were no outliers for the perceived mastery climate variable. Subsequent correlational analyses for the hypothesized relationships of goal orientation, perceived motivational climate, perceived ability, and adaptive achievement behavior, were first carried out with the inclusion of outliers, then followed by analyses with the exclusion of outliers specific to

the variables examined. The latter revealed whether the identified outliers had any effect on the magnitude and direction of the various hypothesized relationships.

The presence of outliers can also affect descriptive statistics such as means, standard deviations, and maximum and minimum values. Thus, presentation of these descriptive statistics for the various variables, for the total sample and the high and low PAvb and PAtks subgroups, was made with the inclusion and exclusion of the identified outliers. These descriptive statistics for goal orientation, perceived motivational climate, and adaptive achievement behavior with the inclusion of outliers are presented in Appendix G, H and I, and with the exclusion of outliers in Appendix J, K and L, respectively. The means for scores on mastery goal orientation were 30.6 (SD = 2.8) and 30.7 (SD = 2.6) for the sample with the inclusion and exclusion of outliers, respectively. The means for scores on ego goal orientation were 12.7 (SD = 4.2) and 12.5 (SD = 3.9) for the sample with the inclusion and exclusion of outliers, respectively. The mean for scores on perceived mastery climate was 38.6 (SD = 3.7) for the sample. There were no outliers for the variable of perceived mastery climate. The means for scores on perceived ego climate were 31.9 (SD = 7.6) and 32.1 (SD = 7.3) for the sample with the inclusion and exclusion of outliers, respectively. The means for adaptive achievement behavior were 87.9 (SD = 7.0) and 88.8 (SD = 5.7) for the sample with the inclusion and exclusion of outliers, respectively.

Interscale Correlations for Goal Orientation Measures and for Perceived Motivational Climate Measures

Goal Orientation Measures

There was no correlation between the mastery and ego goal orientation scales ($r = .00$). Even with the exclusion of outliers specific to the mastery and ego goal orientation variables, the correlation was weak ($r = -.06$). These r values indicated that the two scales are not related. Consistent with previous studies (e.g. Duda, 1992; Duda & White, 1992; White & Duda, 1993), this result indicated that the two constructs of mastery and ego goal orientations are orthogonal, rather than bipolar.

Perceived Motivational Climate Measures

The correlation between the perceived mastery and perceived ego climate scales indicated a significant negative relationship ($r = -.25$, $p < .05$). However, with the exclusion of outliers, the correlation was no longer significant at the .05 level ($r = -.23$). These low negative correlations between the two scales were consistent with findings from previous studies (e.g. Seifriz, Duda & Chi, 1992; Walling, Duda & Chi, 1993).

Relationship Between Goal Orientation and Adaptive Achievement Behavior

The hypothesized relationships of mastery and ego goal orientation with adaptive achievement behaviors are examined in this section. The moderating effects of perceived ability on these relationships are also examined.

Table 1

Relationship Between Goal Orientation and Adaptive Achievement Behaviors, as Moderated by Perceived Ability

		Goal orientation			
		Mastery		Ego	
	n	r	z	r	z
Total sample	68	-.05		.04	
PAvb subgroups					
High	52	-.14		-.13	
			.89		1.34
Low	16	.14		.28	
PAtks subgroups					
High	51	-.20		.02	
			.65		.05
Low	17	.00		.00	

Note. The z values were calculated using the z-test (using Fisher's Zr transformation) to test the significance of the difference between independent r values. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.

It was hypothesized that mastery goal orientation would be positively related to adaptive achievement behavior, whereas the ego goal orientation would not be related to adaptive achievement behavior.

Table 1 indicates that the correlations between mastery goal orientation and adaptive achievement behavior, and between ego goal orientation and adaptive

achievement behaviors were -.05 and .04, respectively. In this study both mastery and ego goal orientation were not significantly related to adaptive achievement behavior. Even with the omission of outliers specific to the goal orientation and adaptive achievement behavior variables, the correlation coefficients between mastery goal orientation and adaptive achievement behavior, and between ego goal orientation and adaptive achievement behavior were still weak and nonsignificant ($r = -.18$ and $r = -.06$, respectively). The absence of relationship between ego goal orientation and adaptive achievement behavior was consistent with the hypothesized relationship between these two variables. However, the results did not support the hypothesized positive relationship between mastery goal orientation and adaptive achievement behavior.

Moderating Effects of Perceived Ability for Volleyball

It was hypothesized that PAvb would have a moderating effect on the relationship between ego goal orientation and adaptive achievement behavior, but not on the relationship between mastery goal orientation and adaptive achievement behavior.

The relationship between mastery goal orientation and adaptive achievement behaviors was predicted to be positive for both the high and low PAvb subgroups; these relationships for the high and low PAvb subgroups were hypothesized not to be significantly different. Table 1 shows the coefficients between mastery goal orientation and adaptive achievement behaviors for the high and low PAvb subgroups, indicating that the relationships between these variables were weak and nonsignificant for both subgroups. To examine the moderating effects of PAvb on the relationship between

mastery goal orientation and adaptive achievement behavior, a z-test using Fisher's Zr was conducted to determine if there was a difference between the two correlations. The results indicated that the correlations for the high and low PAvb subgroups were not significantly different from each other (z-ratio = .89). Similar results were also found with the omission of outliers specific to the mastery goal orientation and adaptive achievement behaviors variables. With the exclusion of these outliers, the coefficient correlations for the high and low PAvb subgroups were r = -.20 and r = .00, respectively. The z-test for these two correlations again indicated that the two r values were not significantly different (z-ratio = .57). Consistent with predictions, these results indicated that PAvb did not have a moderating effect on the relationship between mastery goal orientation and adaptive achievement behaviors. However, the results did not support the prediction that there would be a positive relationship between mastery goal orientation and adaptive achievement behavior for both the high and low PAvb subgroups.

The relationship between ego goal orientation and adaptive achievement behavior was predicted to be positive for the PAvb high subgroup and negative for the low PAvb subgroup; these relationships for the high and low PAvb subgroups were hypothesized to be significantly different from each other. Table 1 shows the coefficients between ego goal orientation and adaptive achievement behaviors for the high and low PAvb subgroups, indicating that the relationships between these variables were weak and nonsignificant for both subgroups. The z-test for difference between the two coefficients indicated that the two r values were not significantly different (z-ratio = 1.34). Again,

even with the omission of the outliers specific to the ego goal orientation and adaptive achievement behaviors variables, the coefficients for the high and low subgroup were still weak and nonsignificant ($r = -.13$ and $r = .00$, respectively). The z-ratio of .39 for these two correlations indicated that the two r values were not significantly different. Inconsistent with predictions were the weak relationships between ego goal orientation and adaptive achievement behavior for both the high and low PAvb subgroups, and also the nonsignificant difference in these r values for the high and low PAvb subgroups. The latter indicated that PAvb did not have a moderating effect on the relationship between ego goal orientation and adaptive achievement behavior.

Moderating Effects of Perceived Ability for Specific Tasks

It was hypothesized that PAtks would have a moderating effect on the relationship between ego orientation and adaptive achievement behavior, but not on the relationship between mastery goal orientation and adaptive achievement behavior.

The relationship between mastery goal orientation and adaptive achievement behavior was predicted to be positive for both the high and low PAtks subgroups; these relationships for the high and low PAtks subgroups were hypothesized not to be significantly different. Table 1 shows that the coefficients between mastery goal orientation and adaptive achievement behavior for both the high and low PAtks subgroups were not significant . More specifically, the relationships between mastery goal orientation and adaptive achievement behavior were weak and non existent, for the high and low PAtks subgroups, respectively. The z-test for difference between the two

correlations revealed that the two r values were not significantly different from each other (z-ratio = .65). Similar results were also found with the omission of outliers specific to the mastery goal orientation and adaptive achievement behaviors variables. With the exclusion of the outliers, the coefficient correlations for the high and low PAtks subgroups were r = -.20 and r = -.16, respectively. These outliers belonged to the low PAtks subgroup. The z-test for difference for these two correlations again indicated that the two r values were not significantly different (z-ratio = .12). Consistent with predictions, these results indicated that PAtks did not have a moderating effect on the relationship between mastery goal orientation and adaptive achievement behavior. However, the results did not support the prediction that there would be a positive relationship between mastery goal orientation and adaptive achievement behavior for both the high and low PAtks subgroups.

The relationship between ego goal orientation and adaptive achievement behavior was predicted to be positive for the PAtks high subgroup, and negative for the low PAtks subgroup; these relationships for the high and low PAtks subgroups were hypothesized to be significantly different from each other. Table 1 shows that the coefficients between ego goal orientation and adaptive achievement behaviors for both the high and low PAtks subgroups were not significant; there was no relationship between the two variables for both the high and low PAtks subgroups. The z-test for difference for these correlations indicated that the two r values were not significantly different from each other (z-ratio = .05). With the omission of the outliers specific to the ego goal orientation and adaptive achievement behavior variables, the coefficient for the high subgroup still indicated that

there was no relationship between the two variables (r = .07). The correlation coefficient for the low PAtks subgroup revealed a weak relationship between the two variables (r = -.42); however the r value was not significant. The z-test for difference again revealed that the two r values were not significantly different (z-ratio = 1.55). Inconsistent with predictions were the weak and absence of relationships between ego goal orientation and adaptive achievement behavior for both the high and low PAtks subgroups, and also the nonsignificant difference in these r values for the high and low PAtks subgroups. The latter indicated that PAtks did not have a moderating effect on the relationship between ego goal orientation and adaptive achievement behavior.

Relationship Between Perceived Motivational Climate and Adaptive Achievement Behavior

The hypothesized relationships of perceived mastery climate and perceived ego climate with adaptive achievement behavior are examined in this section. The moderating effects of perceived ability on these relationships are also examined.

It was hypothesized that perceived mastery climate would be positively related to adaptive achievement behavior, whereas perceived ego climate would not be related to adaptive achievement behavior.

The correlations between perceived mastery climate and adaptive achievement behavior, and between perceived ego climate and adaptive achievement behavior were .0[illegible] and .00, respectively (see Table 2). This indicated that both perceived mastery and perceived ego climate were not related to adaptive achievement behavior. Examination of

Table 2

Relationship Between Perceived Motivational Climate and Adaptive Achievement Behaviors, as Moderated by Perceived Ability

		Perceived motivational climate			
		Mastery		Ego	
	n	r	z	r	z
Total sample	68	.09		.00	
PAvb subgroups					
High	52	-.10		.22	
			2.65**		2.78**
Low	16	.63**		-.57*	
PAtks subgroups					
High	51	.02		.25*	
			.65		3.03***
Low	17	.21		-.58**	

Note. The z values were calculated using the z-test (using Fisher's Zr transformation) to test the significance of the difference between independent r values. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.
*p<.05. **p<.01. ***p<.005.

the scatterplots supported the low r values. Even with the omission of outliers specific to the perceived motivational climate and adaptive achievement behavior variables, the correlation coefficients for perceived mastery and perceived ego climate with adaptive achievement behavior were also weak and not significant (r = -.07 and r = .12,

respectively). The absence of relationship between perceived ego climate and adaptive achievement behavior was consistent with the hypothesized relationship between these two variables. However, the absence of relationship between perceived mastery climate and adaptive achievement behaviors was not consistent with prediction.

Moderating Effects of Perceived Ability for Volleyball

It was hypothesized that PAvb would have a moderating effect on the relationship between perceived ego climate and adaptive achievement behavior but not on the relationship between perceived mastery climate and adaptive achievement behavior.

The relationship between perceived mastery climate and adaptive achievement behavior was predicted to be positive for both high and low PAvb subgroups; these relationships for the two subgroups were hypothesized not to be significantly different. The coefficients between perceived mastery climate and adaptive achievement behavior indicated a weak, inverse nonsignificant relationship for the high PAvb subgroup, but a significant positive relationship ($r = .63$, $p < .01$) for the low PAvb subgroup (see Table 2). The z-test for difference between the two correlations revealed a significant z-ratio of 2.65 ($p < .01$). However, investigation of the scatterplots for the high and low PAvb subgroup supported the weak r value for only the high subgroup. For this subgroup, even with the omission of a outlier specific to the adaptive achievement behavior variable (there were no outlier for the perceived mastery climate variable), the correlation coefficient between perceived mastery climate and adaptive achievement behavior still indicated a weak and nonsignificant relationship ($r = -.08$). However, for the low Pavb

subgroup, the scatterplot suggests that the significant positive r value of .63 ($p < .05$) could be affected by the presence of 2 outliers (refer to Fig 3). The two outliers seen in the scatterplot were the two identified outliers of the adaptive achievement behavior variable. With the omission of these two outliers, the relationship between perceived mastery climate and adaptive achievement behavior for the low PAvb subgroup was no longer significant ($r = .19$). The z-test for difference between these correlations resulted in a nonsignificant z-ratio of .80. These results indicated that the initial positive significant r value for the low PAvb subgroup and the significant z-ratio between the two subgroups were distorted by the presence of these two outliers. Thus, consistent with predictions, these results indicated that PAvb did not have a moderating effect on the relationship between perceived mastery climate and adaptive achievement behaviors. However, these results did not support the predictions that there would be a positive relationship between perceived mastery climate and adaptive achievement behavior for both the high and low PAvb subgroups.

The relationship between perceived ego climate and adaptive achievement behavior was predicted to be positive for the PAvb high subgroup and negative for the low PAvb subgroup; these relationships for the two subgroups were hypothesized to be significantly different from each other. Coefficients between perceived ego climate and adaptive achievement behavior indicated a nonsignificant positive and a significant negative r value for the high and low PAvb subgroups, respectively (see Table 2). The correlation for the high PAvb subgroup fell just below significance to support the prediction of a positive relationship between perceived ego climate and adaptive

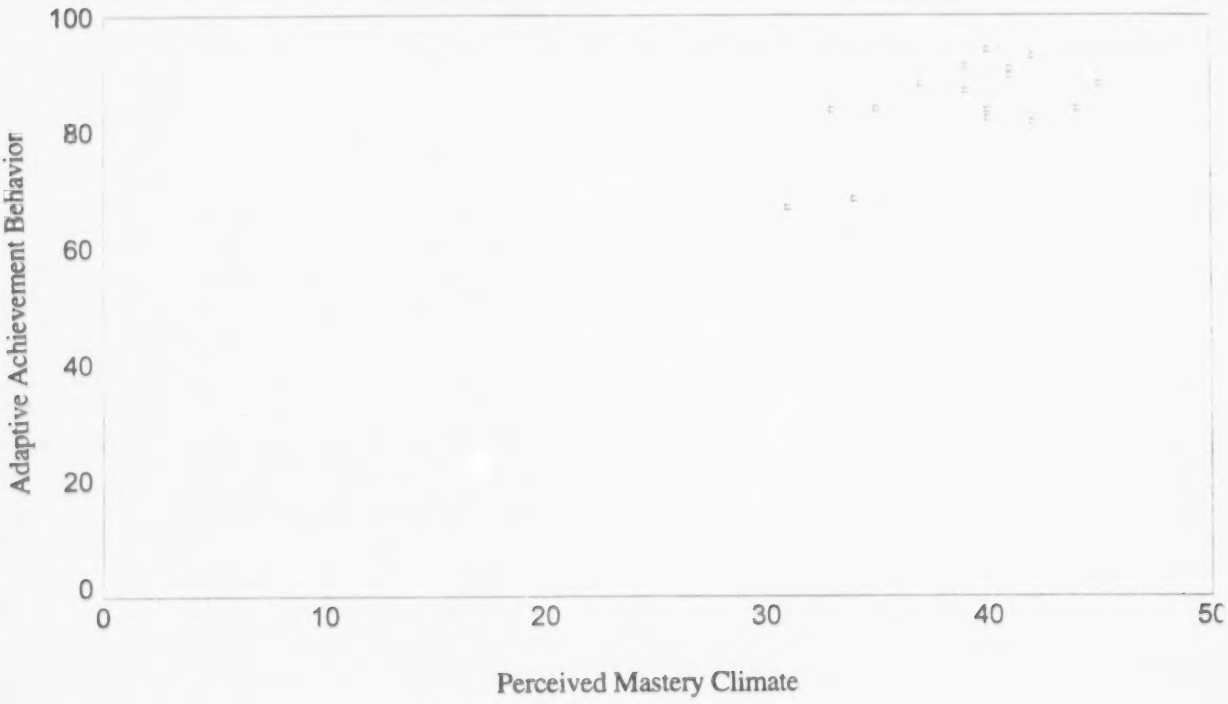

Figure 3. Scatterplot of percentages on adaptive achievement behavior with scores on the perceived motivational climate scale for the low PAvb subgroup.

achievement behavior ($r = .22$, $p < .07$). The z-test for difference between the two correlations revealed a significant z-ratio of 2.78 ($p < .01$). With the omission of outliers, the correlation for the high PAvb subgroup however revealed a positive relationship ($r = .25$), significant at the .05 level. The resulting coefficient of determination (r^2) indicated that 6% of the variance in perceived ego climate was associated with the variance in adaptive achievement behavior. For the low PAvb subgroup, even with the omission of outliers, the correlation between perceived ego climate and adaptive achievement behaviors was still significant ($r = -.56$, $p < .05$). The resulting coefficient of determination indicated that 31% of the variance in perceived ego climate was associated with the variance in adaptive achievement behavior. The test for difference between these two correlations still resulted in a significant z-ratio ($z = 2.63$, $p < .01$). Consistent with predictions were the positive and negative relationships between perceived ego climate and adaptive achievement behaviors for the high and low PAvb subgroups, respectively. Also, the results indicated that the r values for the high and low PAvb subgroups were significantly different. The latter indicated that PAvb did have a moderating effect on the relationship between perceived ego climate and adaptive achievement behavior. Similar results were also found with the omission of outliers.

Moderating Effects of Perceived Ability for Specific Tasks

It was hypothesized that PAtks would have a moderating effect on the relationship between perceived ego climate and adaptive achievement behavior but not on the relationship between perceived mastery climate and adaptive achievement behavior.

The relationship between perceived mastery climate and adaptive achievement behavior was predicted to be positive for both high and low PAtks subgroups; these relationships for the two subgroups were hypothesized not to be significantly different. Table 2 shows that the coefficients between perceived mastery climate and adaptive achievement behavior for both high and low PAtks subgroups were not significant. More specifically, the relationships between perceived mastery climate and adaptive achievement behavior were close to zero and weak for the high and low PAtks subgroups, respectively. The test for difference between the two correlations revealed a z-ratio of .65. This indicated that the two r values were not significantly different from each other. Examination of the scatterplots supported these r values. Even with the omission of outliers specific to the adaptive achievement behavior variables, similar results were found. With the exclusion of the three outliers, all from the low PAtks subgroup, the coefficient correlations for the high and low PAtks subgroups were r = .02 and r = -.28, respectively. The z-ratio of .89 for these two correlations again indicated that the two r values were not significantly different. Consistent with predictions, these results indicated that PAtks did not have a moderating effect on the relationship between perceived mastery climate and adaptive achievement behaviors. However, the results did not support the predictions that there would be a positive relationship between perceived mastery climate and adaptive achievement behavior for both the high and low PAtks subgroups.

The relationship between perceived ego climate and adaptive achievement behavior was predicted to be positive for the high PAtks subgroup and negative for the

low PAtks subgroup; these relationships for the two subgroups were hypothesized to be significantly different from each other. The coefficients between perceived ego climate and adaptive achievement behaviors indicated a significant positive and a significant negative r value for the high and low PAtks subgroups, respectively (see Table 2). Examination of the scatterplots supported these r values. The test for difference between the two correlations revealed a significant z-ratio of 3.03 ($p < .005$). Even with the omission of outliers specific to the perceived ego climate and adaptive achievement behavior variables, similar results were found. The correlations for the high and low PAtks subgroups remained significant ($r = .25$, $p < .05$ and $r = -.50$, $p < .05$, respectively). The resulting coefficient of determination indicated that 6% and 25% of the variance in perceived ego climate was associated with the variance in adaptive achievement behavior for the high and low PAtks subgroups, respectively. The test for difference between these two correlations also resulted in a significant z-ratio ($z = 2.39$, $p < .05$). Consistent with predictions were the positive and negative relationships between perceived ego climate and adaptive achievement behavior for the high and low PAtks subgroups, respectively. Also, the significant z-ratio indicated that the r values for the high and low PAtks subgroups were significantly different This indicated that PAtks did have a moderating effect on the relationship between perceived ego climate and adaptive achievement behavior. Similar results were also found with the omission of outliers.

Comparison of the Relationships of Goal Orientation and Perceived Motivational Climate with Adaptive Achievement Behavior

Based on research that has progressed along two main tracks, namely, personal disposition and situational influences, it was hypothesized that both goal orientation and perceived motivational climate would be related to adaptive achievement behavior. In this final section, comparisons of the strength of relationships were made using the coefficient correlations of participants' goal orientation and perceived motivational climate with adaptive achievement behavior reported earlier were made. This was done to determine whether goal orientation or perceived motivational climate was more strongly related to adaptive achievement behaviors. A summary of the correlation coefficients for the various hypothesized relationships reported in the third and fourth section of this chapter, are presented in Table 3. Details of the comparison of strength of relationships for the total sample, and the high and low PAvb and PAtks subgroups follow.

Mastery Goal Orientation and Perceived Mastery Climate with Adaptive Achievement Behavior

The relationship between perceived mastery climate and adaptive achievement behavior was slightly stronger than that between mastery goal orientation and adaptive achievement behavior (refer to Table 3). However, both relationships were weak and nonsignificant; the close to zero r values indicated that both mastery goal orientation and perceived mastery climate were very weakly related to adaptive achievement behavior. With the omission of outliers, mastery goal orientation rather than perceived mastery

climate, was found to be more strongly related to adaptive achievement behavior (r = -.18 and r = -.07, respectively). However, both relationships were again weak and not significant.

Table 3

Correlation Coefficients for Goal Orientation and Perceived Motivational Climate with Adaptive Achievement Behavior

	Adaptive achievement behaviors				
	Total sample	PAvb subgroups		PAtks subgroups	
		High	Low	High	Low
Mastery scales					
Mastery goal orientation	-.05	-.14	.14	-.20	.00
Perceived mastery climate	.09	-.10	.63**	.02	.21
Ego scales					
Ego goal orientation	.04	-.13	.28	.02	.00
Perceived ego climate	.00	.22	-.57*	.25*	-.58**

Note. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.
*p<.05. **p<.01.

Comparison of the strength of relationships between mastery goal orientation and adaptive achievement behavior, and between perceived mastery climate and adaptive achievement behavior, were also made for those with high perceived ability. This was done by comparing the strength of these relationships for the high PAvb and high PAtks subgroups. Table 3 shows that for the high PAvb subgroup, the relationship between mastery goal orientation and adaptive achievement behaviors was slightly stronger than between perceived mastery climate and adaptive achievement behavior. However, the coefficient correlations for both of these relationships were weak and not significant. Omission of outliers revealed similar results; mastery goal orientation compared to perceived mastery climate, was more strongly related to adaptive achievement behavior, but both relationships were weak and not significant. Similar results were also found for the high PAtks subgroup. There was no outliers in this subgroup. Thus, results for both the high PAvb and high PAtks subgroups indicated that for those with high perceived ability, adaptive achievement behavior was found to be more strongly related to mastery goal orientation than to perceived mastery climate. However, both relationships were not significant.

Comparison of the strength of relationships between mastery goal orientation and adaptive achievement behavior, and between perceived mastery climate and adaptive achievement behavior were also made for those with low perceived ability. This was done by comparing the strength of these relationships for the low PAvb and low PAtks subgroups. Table 3 shows that for the low PAvb subgroup, the relationship between perceived mastery climate and adaptive achievement behavior was stronger than that

between mastery goal orientation and adaptive achievement behavior ($r = .63$, $p < .01$ and $r = .14$, respectively). The former significant positive relationship, as noted earlier in the fourth section, was distorted by the presence of two outliers. Omission of the outliers revealed a nonsignificant relationship ($r = .19$). With the omission of outliers, the relationship between perceived mastery climate and adaptive achievement behavior remained stronger than that between mastery goal orientation and adaptive achievement behavior ($r = .00$), both relationships were weak and not significant. For the low PAtks subgroup, the relationship between perceived mastery climate and adaptive achievement behavior was also stronger than that between mastery goal orientation and adaptive achievement behavior. However, both relationships were again weak and not significant. Omission of outliers revealed similar results ($r = -.28$ and $r = -.16$, respectively). Thus, results for both the low PAvb and low PAtks subgroups indicated that for those with low perceived ability, adaptive achievement behavior was found to be more strongly related to perceived mastery climate than to mastery goal orientation. However, both relationships were not significant.

Ego Goal Orientation and Perceived Ego Climate with Adaptive Achievement Behavior

The relationship between ego goal orientation and adaptive achievement behavior was slightly stronger than that between perceived ego climate and adaptive achievement behavior (see Table 3). However, both of these relationships were very weak and not significant. With the omission of outliers, both relationships were still weak and not significant. However, the relationship between perceived ego climate, rather than ego goal

orientation, was a little more strongly related to adaptive achievement behavior ($r = .12$ and $r = -.06$, respectively).

Comparison of the strength of relationship between ego goal orientation and adaptive achievement behavior, and between perceived ego climate and adaptive achievement behavior was also made for those with high perceived ability. This was done by comparing the strength of these relationships for the high PAvb and high PAtks subgroups. Table 3 shows that for the high PAvb subgroup, the relationship between perceived ego climate and adaptive achievement behavior was stronger than that between ego goal orientation and adaptive achievement behavior. Both relationships were not significant. However, with the omission of outliers, the relationship between perceived ego climate and adaptive achievement behavior was found to be significant ($r = .25$, $p < .05$) and remained stronger than the nonsignificant relationship between ego goal orientation and adaptive achievement behavior ($r = -.13$). For the high PAtks subgroup, the significant relationship between perceived ego climate and adaptive achievement behavior was also stronger than the nonsignificant relationship between ego goal orientation and adaptive achievement behavior. Even with the omission of outliers, similar results were found; perceived ego climate compared with ego goal orientation, was more strongly related to adaptive achievement behavior ($r = .27$, $p < .05$ and $r = .07$, respectively). Thus, results for both the high PAvb and high PAtks subgroups indicated that for those with high perceived ability, adaptive achievement behavior was found to be more strongly related to perceived ego climate than ego goal orientation.

Comparison of the strength of relationships between ego goal orientation and adaptive achievement behavior, and between perceived ego climate and adaptive achievement behavior was also made for those with low perceived ability. Table 3 shows that for the low PAvb subgroup, the significant relationship between perceived ego climate and adaptive achievement behavior was stronger than the nonsignificant relationship between ego goal orientation and adaptive achievement behavior. Even with the omission of outliers, similar results were found ($r = -.56$, $p < .05$ and $r = .00$, respectively). For the low PAtks subgroup, the significant relationship between perceived ego climate and adaptive achievement behavior was also stronger than the nonsignificant relationship between ego goal orientation and adaptive achievement behavior (refer to Table 3). Similar results were also found with the omission of outliers ($r = -.50$, $p < .05$ and $r = -.42$). Thus, results for both the low PAvb and low PAtks subgroups indicated that for those with low perceived ability, adaptive achievement behavior was found to be more strongly related to perceived ego climate than ego goal orientation.

CHAPTER FIVE - DISCUSSION

Findings of this study provided partial support for the hypotheses concerning the relationships between goal orientation, perceived ability, and adaptive achievement behavior, and the relationships between perceived motivational climate, perceived ability, and adaptive achievement behavior.

Relationships Between Goal Orientation, Perceived Ability, and Adaptive Achievement Behavior

In this present study, the results did not provide support for the stated hypotheses concerning the relationships between mastery goal orientation, perceived ability, and adaptive achievement behavior. Though the results indicated that both sport- and task-specific perceived ability did not have a moderating effect on the relationship between mastery goal orientation and adaptive achievement behavior, they did not show that mastery goal orientation was positively related to adaptive achievement behavior, regardless of one's level of perceived ability.

However, the results provided partial support for the hypotheses concerning the relationship between ego goal orientation, perceived ability, and adaptive achievement behavior. Consistent with prediction was the absence of relationship between ego goal orientation and adaptive achievement behavior. However, inconsistent with predictions, both sport- and task-specific perceived ability did not have a moderating effect on the

relationship between ego goal orientation and adaptive achievement behavior. The relationships were also not found to be positive or negative for the high and low subgroups, respectively.

Although many of the predictions for the relationship between goal orientation, perceived ability, and adaptive achievement behavior were not supported in the present study, results from previous classroom-based studies (Elliott & Dweck, 1988), sport settings (Duda, 1988; Duda, Smart and Tappe, 1989; Lerner & Locke, 1995; Lochbaum & Roberts, 1993), and physical education classes (Solmon & Boone, 1993) have provided support for these theoretical predictions. Most studies however only examined the relationship between goal orientation and adaptive achievement behavior. In general, these studies have indicated that the determination of individual differences in mastery and ego goal orientation provides considerable insight into the behavioral variability in achievement situations. They have found that a mastery goal orientation, in which the emphasis is on developing one's abilities and learning new skills, was associated with adaptive achievement behaviors regardless of one's level of perceived ability. On the other hand, ego goal orientation, in which the emphasis is on demonstrating superior ability, has been found to be associated with adaptive and nonadaptive achievement behaviors for those with high and low perceived ability, respectively. Most of these studies however, have relied mainly on self-report measures (e.g., self-reports of one's willingness to persist and exert effort in practice) rather than observations of actual individual behaviors in achievement settings. Of the few studies that have used a direct

observation of actual behavior, the findings were mixed. In a recent study by Lerner & Locke (1995), the researchers found a positive relationship between mastery goal orientation and the actual performance on an endurance sit-up task. This finding was consistent with theoretical predictions. In another study conducted in a physical education class setting, Solmon and Boone (1993) examined the relationship between student goal orientation and in-class achievement behavior of task choice, effort and persistence. A contract grading system was employed to yield an indication of students' choice of challenging tasks and also to record students in-class behavior, namely, effort and persistence. The results of their study provided partial support for the theoretical predictions between goal orientation and achievement behavior. Consistent with previous studies, they found that students' scoring high on the mastery goal orientation selected more challenging tasks; ego goal orientation was found to be negatively related to selection of challenging tasks. Inconsistent with previous findings, Solmon and Boone (1993) reported that effort and persistence failed to contribute significantly to the multivariate relationship between goal orientation and student action. Indeed, much more research using a direct measure of actual behavior is needed to examine the theoretical predictions of the relationships between goal orientation, perceived ability and achievement behavior; to observe what youth actually do in achievement settings, rather than what they say they do.

An alternate explanation for the nonsignificant findings may be related to the independence of the mastery and ego goal orientation constructs. As indicated by Fox et

al. (1994), achievement goal approach research has generally assumed that individuals have a dominant predisposition towards either a mastery or an ego goal orientation and that this influences their achievement behaviors. Thus, research has examined the influence of goal orientation on achievement behavior and has provided information about the influence each goal orientation has on achievement behavior. However, mastery and ego goal orientation have consistently been shown to be weakly correlated or uncorrelated (e.g., Duda, 1992; Duda & White, 1992; White and Duda, 1993). A similar result was found in this present study ($r = .00$). The weak correlations between mastery and ego goal orientation suggest that although it is possible to have a dominant goal orientation, it is equally possible to be high or low in both orientation. Thus, for the present study, the insignificant correlations for the relationships between mastery goal orientation and adaptive achievement behavior, and ego goal orientation and adaptive achievement behavior may suggest that there are no relationships between these variables. However, the low correlations may also indicate interactions between the mastery and ego goal orientation construct (Seifert, 1995). Recent research has been conducted to address the possible interactions between mastery and ego goal orientations. Some of the findings from this work has been consistent with theoretical predictions while others have not. For instance, as predicted, Duda (1988) reported that subjects who were high in mastery goal orientation in sport (i.e. those who were high on mastery and ego goal *or* high on mastery but low on ego goal) tended to have persisted longer in their sport participation. On the other hand, contrary to prediction, Fox et al. (1994) found that individuals that were high on ego goal orientation were at high risk for non-participation in sport,

regardless of their level of perceived ability. More research is needed to examine the combined effects of mastery and ego goal orientations on sport behavior.

Another possible explanation for the nonsignificant findings for the hypothesized relationships between goal orientation, perceived ability, and adaptive achievement behavior could be due to the influence of situational factors. One such possible factor is the perception of the motivational climate. Theoretical predictions based on the work of Nicholls (1989), Dweck and Leggett (1988) and Ames (1992) suggest that while dispositional differences in goal orientation determine the prior probability of adopting a particular goal perspective and displaying particular achievement behavior, situational factors can alter these probabilities. In a particular situation, a critical factor in determining the goal perspective one adopts is the subjective meaning of the motivational climate, that is, the individuals' perceived motivational climate (Ames, 1992). The relationships between perceived motivational climate, perceived ability, and adaptive achievement behavior were also examined in this study. The results are discussed in the following section. Findings of this present study provided partial support for the influence of one's perceived climate on adaptive achievement behaviors.

Relationships Between Perceived Motivational Climate, Perceived Ability, and Adaptive Achievement Behavior

The findings of this study supported the hypotheses on the moderating effects of

both sport- and task-specific perceived ability on relationship between perceived ego climate and adaptive achievement behavior. Specifically, as predicted, the results showed that there was an absence of relationship between perceived ego climate and adaptive achievement behavior. Also consistent with prediction, when perceived ability was taken into account, there was a positive and negative relationship between perceived ego climate and adaptive achievement behavior for the high and low perceived ability subgroups, respectively. These relationships were significant even with the omission of outliers.

These findings are aligned with the predictions of goal perspective theories of achievement behaviors. According to Nicholls (1984a, 1984b) and Ames (1992), individuals who perceived an ego climate as salient within their sport context are likely to adopt an ego goal perspective in which the emphasis is on demonstrating superior ability as compared to others. Since these individuals have high confidence in their ability to be successful (that is, to outperform others), they are likely to exert maximal effort and persist in task learning, thus, engaging in adaptive achievement behaviors. However, for individuals who perceived an ego climate as salient but have doubts about their perceived ability, nonadaptive achievement behaviors are expected. Individuals with low perceived ability do not expect success in outperforming the others. Thus, in the attempt to avoid demonstrating low ability, they are likely to exert minimal effort and persistence, and engage in nonadaptive achievement behaviors. These theoretical predictions were also supported by previous studies conducted in both academic (Elliott & Dweck, 1988) and sport domains (Hall, cited in Duda, 1992; Solmon, 1995). The results of this study

provide evidence in a natural sport setting for the theoretical predictions that heretofore have been demonstrated in experimental settings.

The goal perspective theories of achievement behavior (Ames, 1992; Nicholls, 1984a, 1984b) also predicted that individuals who perceived a mastery climate as salient within their sport context are likely to adopt a mastery goal perspective in which the emphasis is on learning and doing one's best. As such, an individual who perceived a mastery climate as salient is likely to engage in adaptive achievement behaviors regardless of one's level of perceived ability. These theoretical predictions were not supported by the results of this study. Although the results indicated that both sport- and task-specific perceived ability did not have a moderating effect on the relationships between perceived mastery climate and adaptive achievement behavior, the results did not support the theoretical predictions that individuals who perceived a mastery climate as salient within the sport context tend to be engaged in adaptive achievement behavior, regardless of one's level of perceived ability. These results were also not consistent with previous studies. Previous studies in the academic domain (Ames & Archer, 1988; Elliott & Dweck, 1988), physical education (Papaioannou, 1995; Solmon, 1995) and the sport context (Seifriz et al., 1992) have reported findings consistent with the theoretical predictions. For instance, using self-reported measures, Seifriz et al. (1992) and Papaioannou (1995) found that the subjects' perception of a mastery climate was related to their reported exerted effort. Solmon (1995) conducted an experimental study using an analysis of actions rather than a self-report of in-class behavior to examine the differences in student practice behaviors as

a function of motivational climate. Consistent with theoretical predictions and previous studies using self-report measures, Solmon (1995) reported that individuals in a mastery climate condition exerted a greater amount of effort (measured by number of trials per minute) on challenging tasks than those in the ego climate condition.

Although previous studies have provided support for the theoretical predictions between perceived mastery climate and adaptive achievement behaviors, many have relied on self-report measures rather than a direct observation of actual achievement behaviors as used in this study. Much more research using direct measures of actual behavior is needed to provide further support for the theoretical predictions.

An alternative explanation for the nonsignificant findings may also be related to the weak relationship between the perceived mastery and perceived ego climate. Similar to the findings of previous studies (Seifriz et al., 1992; Walling et al., 1993), the interscale correlation between perceived mastery and perceived ego climate was also weakly correlated in this present study ($r = -.23$). This suggests that while one can perceive an ego climate or mastery climate to be salient, one can also perceive an ego *and* a mastery climate to be salient or perceive both to be low. Previous correlational studies that have examined the influences of perceived motivational climate on achievement behavior have provided important information about the influences each type of perceived climate has on achievement behavior but have ignored the possible interactions between the perceived mastery and perceived ego climate. Similarly, experimental studies have also ignored the possible interactions between the two perceived climates. Previous experimental studies

conducted in both academic and sport settings were designed to contrast the extremes of a perceived mastery or perceived ego climate, and then examine the influence of these climates on achievement behaviors. These were done by using hypothetical scenarios or the manipulation of the motivational climate so that either a perceived mastery or perceived ego climate was salient. The present study was conducted in a natural setting. Ames and Archer (1988) indicated that in a classroom situation, the informational cues presented by teachers to emphasize one goal perspective or another are often mixed. This suggests that while it is possible for individuals to perceive either a mastery or ego climate to be dominant, it is also possible for individuals to perceive the climate as being high or low on both. Thus, the low correlation between perceived mastery climate and adaptive achievement behavior may be interpreted as indicating no relationship between the two variables, or it may also suggest that interactions among the perceived mastery and ego climate may be occurring. The classroom field-based study by Ames and Archer (1988) examined the separate and combined influence of perceived mastery and perceived ego climate on achievement behavior. Consistent with theoretical predictions and previous studies, they found that perceived mastery was positively related to reported preference for challenging tasks, while perceived ego climate was not related to task choices. Using perceived mastery and ego climate profile analysis, they found that it was the degree of one's perceived mastery climate, rather than perceived ego climate, that was predictive of how students behaved in learning. Seifriz et al. (1992) reported similar findings. Future research examining both separate and combined influences on perceived mastery and ego climate on adaptive achievement behavior is needed in sport settings.

Comparison of Strengths of the Relationships of Goal Orientation and Perceived Motivational Climate with Adaptive Achievement Behavior

Motivation research that has progressed along two relatively separate tracks, namely, personal disposition and situational influences, has indicated that both goal orientation and perceived motivational climate are related to one's adaptive achievement behavior. Thus, a question raised in this study was whether participants' goal orientation or perceived motivational climate was more strongly related to their adaptive achievement behavior. However, as reported earlier in this study, many of the hypothesized relationships between goal orientation, perceived motivational climate, and adaptive achievement behavior were found to be statistically nonsignificant. An exception was the relationship between perceived ego climate and adaptive achievement behavior as moderated by perceived ability. Thus, the comparison of the strength of relationships of goal orientation and perceived motivational climate with adaptive achievement indicated that perceived ego climate was more strongly related to adaptive achievement behavior than ego goal orientation for the high and low sport- and task-specific perceived ability subgroups. This findings suggest that in this study, a perceived ego climate might have superseded one's ego goal orientation and influenced one's adaptive achievement behavior. This speculation is in line with theoretical work (Ames, 1992; Nicholls, 1984a, 1984b; Roberts, 1992). As stated by Roberts (1992), motivational climate can and may override predispositions toward a particular goal orientation. However, this is a much understudied area in motivation research. Future research is needed to address the

influence of both goal orientation and perceived motivational climate on adaptive achievement behavior and compare the strength of the relationship. If this pattern of results can be reproduced in subsequent studies, it would be interesting to explore when and under what circumstances does the salience of a perceived ego climate override one's goal orientation.

This study involved a rather homogeneous group of players with respect to their volleyball achievement and motivation level. Specifically, all subjects involved in the study had worked hard toward being selected as one of the top 12 players to represent their respective school in the interschool volleyball competition. Therefore, it was interesting to note that there was still a group of individuals who had low perceived volleyball- and task-specific ability in spite of being a player on the school team. The group however, was not large. Also, it might be expected that during the competition season, all these individuals would be engaged in adaptive achievement behaviors such as working hard, exerting maximal effort and persistence so as to improve their skills and game play in preparation for the competition. Yet observations of actual behaviors during their practice sessions revealed a variation in amount of adaptive achievement behaviors. Thus, the finding that the achievement behaviors of these motivated players were responsive to their perceived ego climate during their practice sessions is particularly noteworthy.

Implications

On the theoretical level, the results of this study provide evidence to support several proposed relationships between perceived ego climate, perceived ability, and achievement behaviors in a natural setting. The results suggest that the goal perspective one adopts in a particular situation can be affected by the psychological climate created by coaches, teachers, or significant others. They also suggest that an examination of one's perception of his or her motivational climate can provide insight into variations in achievement behaviors. Specifically, individuals who perceived their climate as placing an emphasis on interpersonal competition or social comparison are likely to engage an ego goal perspective. The adoption of this goal perspective however tends to result in different achievement behaviors, depending on one's level of perceived ability. For those with high perceived ability, a perception of an ego climate was found to be linked to higher amount of adaptive achievement behaviors. These behaviors, characterized by challenge-seeking and task persistence are likely to contribute to one's achievement and participation in learning. On the other hand, for those with low perceived ability, a perception of an ego climate was found to be linked with higher amount of nonadaptive achievement behaviors. Characterized by challenge-avoidance and a lack of persistence and effort, these behaviors are not only unlikely to contribute towards one's achievement and learning, they may eventually lead one to withdraw from sport participation.

These findings have some practical implications. Coaches, physical educators or significant others should be aware of their role in the active construction of an individual's perception of the psychological climate by emphasizing a mastery or an ego goal. If the goal of coaches and educators is to enhance athletes' motivation, performance, and participation in sport, they may need to take stock of the demands, cues, rewards, and expectations that they make salient to the individuals and try to determine how the individual perceives the climate. For individuals with low perceived ability, coaches and educators may have to decrease the emphasis on social comparison; for these individuals, perceiving an ego climate can result in greater engagement in nonadaptive achievement behavior. However, an emphasis on interpersonal competition and winning can be motivating for individuals with high perceived ability; for these individuals with high perceived ability, a perceived ego climate can be linked to higher amount of adaptive achievement behavior. Coaches and educators should however be cautioned that for these individuals, the engagement in adaptive achievement behavior are viewed as a means to an end, namely, the demonstrating of superior ability. For these individuals, high perceived ability means that one is able to demonstrate superior ability or outperform the others. Such a focus however reduces the possibility that an athlete will perceive himself or herself to be always competent and in control . Should these individuals be placed in situations which threaten their perceived ability (e.g., if one's performance is subpar compared to others), then perceptions of low ability will result. This in turn will lead one to engage in high amount of nonadaptive achievement behavior.

CHAPTER SIX - SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the relationships of participants' goal orientation, perception of motivational climate, and perception of ability with the achievement behavior of junior high school youth participation in the interschool volleyball league. Four major questions were of interest:

1. Were participants' goal orientation and participants' perception of motivational climate both related to their adaptive achievement behavior?

2. Was the relationship between participants' goal orientations and achievement behaviors moderated by the participants' perception of their abilities?

3. Was the relationship between participants' perceptions of motivational climate and adaptive achievement behaviors moderated by the participants' perception of their abilities?

4. Which relationship was stronger, the relationship between participant's goal orientation and adaptive achievement behavior or the relationship between participant's perceptions of motivational climate and adaptive achievement behavior?

Though previous research has shown that both goal orientation and perception of motivational climate influence one's achievement behavior, and that these relationships are moderated by one's perception of his or her ability, the findings reported thus far

have relied mainly on self-report measures. The purpose of this study was to improve upon the previous research by using direct observation of actual achievement behavior of youth in a natural sport setting, and to examine the relationships between goal orientation, perceived motivational climate, perceived ability and adaptive achievement behavior jointly in one study.

Sixty-eight (30 males and 38 females) volleyball players from 12 junior high school teams in Edmonton participated in this study. Each subject completed the Task and Ego Orientation in Sport Questionnaire, the Perceived Motivational Climate in Sport Questionnaire, and also two items on their sport- and tasks-specific perceived ability. Subjects' adaptive achievement behavior were measured using a modified version of the Academic Learning Time in Physical Education (ALT-PE) (Siedentop, Tousignant & Parker, 1982) observation instrument during subjects' volleyball practice sessions. The relationships between subjects' goal orientation, perceived motivational climate and adaptive achievement behavior were analyzed using Pearson product-moment correlations. The moderating effects of perceived ability on the relationships between goal orientation and adaptive achievement behavior, and perceived motivational climate and adaptive achievement behavior were determined by the z-test using Fisher's Zr.

The results of the study provided only partial support for the theoretical predictions on the relationships between goal orientation, perceived motivational climate, perceived ability and adaptive achievement behavior. Consistent with predictions, the results showed that both sport- and task-specific perceived ability had a moderating

effect on the relationship between perceived ego climate and adaptive achievement behavior. Specifically, for the high perceived ability subgroup, there was a positive relationship between perceived ego climate and adaptive achievement behavior. On the other hand, for the low perceived ability subgroup, the relationship between perceived ego climate and achievement behavior was found to be negative. Inconsistent with predictions, the results did not show that perceived mastery climate and mastery goal orientation were positively related to adaptive achievement behavior regardless of one's perceived ability, and that perceived ability had a moderating effect on the relationship between ego goal orientation and adaptive achievement behavior.

Comparison of the strength of relationship between participants' goal orientation and adaptive achievement behavior, and participants' perceived motivational climate and adaptive achievement behavior, indicated that the latter relationship was stronger. Specifically, for both the high and low sport- and task-specific perceived ability subgroups, perceived ego climate was found to be more strongly related to adaptive achievement behavior than ego goal orientation.

In concluding this section, the following hypotheses were confirmed by the results:

For junior high school youth participating in the interschool volleyball league,

2. There will be no relationship between their ego goal orientation and adaptive achievement behavior during their volleyball practice session.

For junior high school youth participating in the interschool volleyball league,

2. There will be no relationship between their perceived ego climate and adaptive achievement behavior during their volleyball practice session.

4. The relationship between their perceived ego climate and adaptive achievement behavior in their volleyball practice session will be moderated by their perceived ability. Specifically,

a) For those with high perceived ability, there will be a positive relationship between their perceived ego climate and adaptive achievement behavior.

b) For those with low perceived ability, there will be a negative relationship between their perceived ego climate and adaptive achievement behavior.

The following hypotheses were not supported:

For junior high school youth participating in the interschool volleyball league,

1. There will be a positive relationship between their mastery goal orientation and adaptive achievement behavior during their volleyball practice session;

3. The relationship between their mastery goal orientation and adaptive achievement behavior in their volleyball practice session will not be moderated by their perceived ability. Specifically, there will be a positive relationship between mastery goal orientation and adaptive achievement regardless of their perceived ability.

4. The relationship between their ego goal orientation and adaptive achievement behavior in their volleyball practice session will be moderated by their perceived ability. Specifically,

a) For those with high perceived ability, there will be a positive relationship between their ego goal orientation and adaptive achievement behavior.

b) For those with low perceived ability, there will be a negative relationship between their ego goal orientation and adaptive achievement behavior.

For junior high school youth participating in the interschool volleyball league,

1. There will be a positive relationship between their perceived mastery climate and adaptive achievement behavior during their volleyball practice session.

3. The relationship between their perceived mastery climate and adaptive achievement behavior in their volleyball practice session will not be moderated by their perceived ability. Specifically, there will be a positive relationship between perceived mastery climate and adaptive achievement behavior regardless of their perceived ability.

Conclusions

The findings of this study provided support for the hypotheses concerning the relationship between perceived ego climate, perceived ability and adaptive achievement behavior; that perceived ability has a moderating effect on the relationships between perceived ego climate and adaptive achievement behavior. These findings suggest that perception of an ego climate is associated with different achievement behavior, depending on one's level of perceived ability. Specifically, the findings suggest that individuals who perceived an ego climate as salient and have high perceived ability are likely to engage in adaptive achievement behaviors, such as trying hard, selecting challenging tasks and exerting optimal effort and persistence. On the other hand, individuals who perceived an

ego climate as salient but have doubts about their perceived ability, are likely to engage in nonadaptive achievement behavior, such as avoiding challenging tasks, exerting minimal effort and persistence.

In comparing the strength of relationships between goal orientation and adaptive achievement behavior, and perceived motivational climate and adaptive achievement behavior, the findings showed that perceived ego climate was more strongly related to adaptive achievement behavior than ego goal orientation for both the high and low perceived ability subgroups. In this study, the findings suggests that situational factors which place an emphasis on social comparison and interpersonal competition can be powerful factors in achievement settings and it can supersede personal disposition factors such as one's ego goal orientation.

Recommendations

The present study was conducted to examine the theoretical predictions of the relationships between goal orientation, perceived motivational climate, perceived ability and adaptive achievement behavior, in a natural setting by using a direct observation measure of achievement behavior. The results from this study only provided partial support for the theoretical predictions. This emphasized the need for more research in the natural settings, and for future research to use direct observation measures of achievement behavior, that is, to observe what individuals actually do, rather than what they say they do.

As a study conducted in a natural setting, this study had the advantage of assessing the influence of goal orientation, perceived motivational climate, perceived ability and adaptive achievement behavior as they occurred naturally. However, there were several concerns that future replicative studies in this area may need to take into consideration. Some recommendations are discussed in the following.

In this study, each subject's adaptive achievement behavior was observed in the practice sessions during their league season. On a few occasions, the observed practices sessions for some of the teams were scheduled on the day after one of their league games. For these observed practice sessions, some of the players appeared to be affected by the outcome of the game played the day before (especially if the outcome was a loss). While it was hard to determine if this had any effect, or the extent of the effects of the game outcome on their observed behavior, future research should avoid scheduling observed practice sessions the day following a game. In addition, it would be advantageous to collect subjects' adaptive achievement behavior on two or more practice sessions.

This study was conducted as an attempt to use a direct measure of achievement behavior to examine the theoretical predictions of goal perspectives with adaptive achievement behaviors. It has indicated that systematic observation instruments can be modified and used to investigate players' engagement behaviors in physical activity sessions. Modifications to the ALT-PE instrument were made to ensure that the instrument was sensitive to behaviors players may employ to avoid active participation on assigned tasks (e.g., taking frequent water-breaks). However, to ascertain players' behavior as adaptive or nonadaptive in their natural settings, it might also have been

appropriate to find out the routines and rules that the various coaches have already established with their team members. For example, knowing the routines or procedures dealing with things like using the washroom, getting a drink, or leaving the space, can provide additional information for observers in determining if subjects were involved in adaptive or nonadaptive achievement behaviors.

Additional recommendations to enhance future research in this area are briefly listed in the following:

1. Much of the evidence to support the theoretical predictions of the relationships between goal orientation, perceived motivational climate and adaptive achievement behavior has amassed from laboratory studies. More studies conducted in a natural setting are needed. Replications of the present study in other sports (e.g., basketball, soccer, tennis) as well as among teams of different competitive levels (e.g. youth sport, intercollegiate) are warranted. Findings of these studies could add to the external validity of the present study in addition to providing a further test of achievement motivational theory.

2. Building on the present research, future research should use or develop direct measures of behavior to examine the theoretical predictions of the achievement motivation theory. In addition, future research should also use both self-report and direct measures of behavior to examine the degree to which individuals' responses to the self-report measure corresponded to their actual observed behaviors in practice sessions. It would be interesting to compare what they say they do with what they actually do in achievement settings.

3. Most of the sport research on goal perspectives has generally progressed along two relatively separate tracks, namely, individual differences in goal orientation and perception of motivational climate. Future research needs to address the influences of both goal orientation and perceived motivational climate on achievement behavior. Comparisons of relationships can then be made to determine if one is more strongly related to adaptive achievement behavior than the other.

4. The present research examined the relationship of players' goal orientation, perceived motivational climate, perceived ability and adaptive achievement behaviors at one point in time. Future work should consider whether the relationship between these variables change over time (e.g. across a league season and/or across seasons.).

5. Previous studies have provided evidence to indicate that the constructs of mastery and ego goal orientation are orthogonal. However, these constructs have primarily been viewed separately and possible interactions between the two constructs remain understudied. Additional work is needed to examine the combined effects of both mastery and ego goal orientations on achievement motivation and behavior in sport. Similarly, perceived mastery and perceived ego climate have also been found to be weakly correlated. The combined effects of a perceived mastery and ego climate on one's achievement behavior are also understudied. Additional work is also needed.

6. Finally, the achievement goal perspective theory reflects an interactionist approach to the study of achievement motivation. Future work should examine the interplay between individuals' goal orientation, perceived motivational climate, perceived ability and their achievement behaviors.

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Appendix A

ALT-PE Behavior Category Descriptions

Context Level

The first level of decision focuses on what the class is assigned to do. Three major subdivisions are possible:

1. General Content: Time when students are not involved in physical education subject related activities.

   T = Transition: Managerial and organization activities such as team selection, teacher explanation of organization, change of activity.

   M = Management: Time unrelated to instruction such as attendance, field trip, chit chat.

   B = Break: Rest, drink break.

   WU = Warm Up: Routine exercises to warm or prepare the body for activity but is not directly related to the skill focus of the lesson.

2. Subject Matter Knowledge: Time devoted to relating knowledge related to physical activity.

   TN = Technique: Transmitting information concerning the physical of a skill.

   ST = Strategy: Transmitting information about plans of action for performing.

   R = Rules: Transmitting information about regulations governing activity.

   SB = Social Behavior: Transmitting information about appropriate behavior and sportsmanship.

   BK = Background: Transmitting information about history, rituals, traditions of the activity.

3. Subject Matter Motor: Time when motor involvement in physical activity is the focus.

P = Skill Practice: Practice of skills outside the applied context.

S = Scrimmage/ Routine: Time for refinement of skill in a simulated setting which the skill is used; feedback provided.

G = Game: Time for application of skill in a competition of performance setting; little to no intervention.

F = Fitness: Activities to alter ones present state of fitness through frequency, duration, intensity, etc.

WP = WarmUp Practice: Contains some skill practice as well as exercise.

Learner Involvement Level

The second level of decision focuses on individual target students (s) and describes the nature of the person's involvement in a specific way. Two subdivisions are possible.

1. Not Motor Engaged: Involvement in an activity not leading to the achievement of motor skill performance.

   I = Interim: Interruption of an ongoing activity such as retrieving a ball, adjusting equipment.

   W = Waiting: Waiting a turn of waiting for instruction.

   OF = Off-Task: Not motor engaged when supposed to be; deviant but not motor engaged.

   ON = On-Task: Getting ready or getting on to the assigned task.

   C = Cognitive: Watching or listening to instruction/ demonstration, but not motor involved.

2. Motor Engaged: Time involved with subject matter related motor activities designed to improve motor skill performance.

   MA = Motor appropriate: Student is engaged with high degree of success.

   MI = Motor inappropriate: Student response is not successful or is having difficulty.

   MO = Motor Off-Task: Student is engaged in a motor activity but in the wrong activity for the task.

   MS = Motor Support: Student is assisting another by spotting, feeding a ball, clapping a rhythm for another.

(Revised from: Siedentop, D., Tousignant, M., & Parker, M. (1982). Academic learning time - physical education. 1982 revision coding manual. Unpublished document, The Ohio State University, School of HPER.

Appendix B

Parent/Guardian and Player Consent Form

Faculty of Physical Education & Recreation
University of Alberta
Edmonton, AB, T6G 2H9

Date: 10 October, 1995

Dear Parents/Guardians and players,

I am a graduate student working on my Masters degree in the Faculty of Physical Education and Recreation. I am conducting a study on the feelings and participation patterns of youth in a sport setting. Briefly, my study will examine the feelings and thoughts youth have for their participation in sports, and also what they do during their sport instructional/practice sessions. Information collected will enable further understanding related to how physical educators and coaches can structure the sport environment to enhance participants' learning and sport participation. Hence, I wish to obtain your cooperation in allowing me to have the opportunity to work with your child, which involves: my attending a volleyball practice session to give your child two questionnaires (that collect information related to their goals for participation, their feelings towards their participation and their ability in volleyball), and also to observe his or her behavior patterns during the one practice session.

The coach of your child's volleyball team has agreed to participate in this study by allowing the researcher and her research assistant to attend and observe players who volunteer for this study during a practice session, and also to administer questionnaires to these volunteer players.

During the practice session that my research assistant and I observe, the coach would be encouraged to conduct the instructional/practice session and to interact with the players as he or she normally would. Your child would only be asked to participate in the activities as they normally would. Data on your child's participation behavior will be collected by one or two observers, who would be placed close to but not interfering with the practice session activities. Your child would also be asked to answer 2 sets of questionnaires (related to their goals, feelings towards their participation and their ability). One set will be administered prior to the practice session, and the other immediately following the practice session. The questionnaires are short and each will take approximately 5 minutes to complete. Only participants (with permission of their parents/guardians) that give consent to be involved in the study will be administered the questionnaires and also be observed.

All information and data collected will be treated with the strictest of confidence. Your child and the coach will be guaranteed anonymity. Your child's responses and recorded data will be kept confidential. Although your child's name will be on the consent form, his or her name however will not be placed on the questionnaires or used in any written reports. A number will be placed on the questionnaires instead. Specific information and data collected from your child will not be shared with the coach. The information gained from the study will be used for a masters thesis and may be reported at a professional meeting or for publications in professional journals.

The study has been approved by the Ethics Committee of the Faculty of Physical Education and Recreation at the University of Alberta and also by your School Board. As a volunteer in the study, your child would have the right to withdraw from the study at any time without consequence.

If you and your child agree to volunteer to participate in this study, please complete the following consent form and return it to the coach at the next team practice. You will receive a copy of the consent form you completed. If you have any questions, please contact me at 433-8764. You may also contact Dr. Linda Thompson (Thesis Supervisor) for further details about this study, (phone: 492-8274). Thank you for your time and consideration. Your help is greatly appreciated.

Yours truly,

Clara Tan

Parent/Guardian and Player Consent Form

My signature on this form indicates that my child volunteers to participate in a study conducted by Clara Tan, titled: Relationships between goal perspectives, perception of the climate, perceived ability, and behavior patterns of youth during volleyball team practices.

I understand the following:

1. My child volunteers to participate in the study and has the right to withdraw from the project at any time without prejudice.

2. My child and I have received an explanation about the nature of this study and its purpose, methods and procedures (through letter and discussion with the researcher).

3. There is no danger of physical or psychological harm.

4. The data collected and any resulting data will be confidential. My child and I will remain anonymous in any print material produced.

_____	_____
Signature of Parent/Guardian	Name of Parent/Guardian (Print Last Name, First Name)
_____	_____
Signature of Child (player)	Name of Child (Print Last Name, First Name)
_____	_____
Date of Signature	Signature of Researcher (Clara Tan)

Please return this completed form to your coach at the next team practice. Keep the covering letter for your own information. You will receive a copy of the completed consent form. Thank you.

Clara Tan
c/o Dr. L. Thompson
P-421 Van Vliet Centre
Faculty of Physical Education & Recreation
University of Alberta
Edmonton, AB, T6G 2H9

Appendix C

Task and Ego Orientation in Volleyball Questionnaire

QUESTIONNAIRE 1

Subject No:_____ Age:_____

Directions: Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response.

When do you feel most successful in volleyball?

I feel most successful in volleyball when...

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) I'm the only one who can do the play or skill.	SD	D	N	A	SA
2) I learn a new skill and it makes me want to practice more.	SD	D	N	A	SA
3) I can do better than my friends.	SD	D	N	A	SA
4) The others can't do as well as me.	SD	D	N	A	SA
5) I learn something that is fun to do.	SD	D	N	A	SA
6) Others mess-up and I don't.	SD	D	N	A	SA
7) I learn a new skill by trying hard.	SD	D	N	A	SA
8) I work really hard.	SD	D	N	A	SA
9) I score the most points/goals/hits/etc.	SD	D	N	A	SA
10) Something I learn makes me want to go and practice more.	SD	D	N	A	SA

I feel most successful in volleyball when...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11) I'm the best.	SD	D	N	A	SA
12) A skill I learn really feels right.	SD	D	N	A	SA
13) I do my very best.	SD	D	N	A	SA

Directions: Please answer each of the questions listed below by circling the appropriate number.

---

1. How good do you think you are in volleyball?

(I'm not good at all) 1 2 3 4 5 6 7 (I'm very good)

2. How good do you think you will be in the activities planned for today's volleyball practice session?

(I'm not good at all) 1 2 3 4 5 6 7 (I'm very good)

(Revised from: Duda, J.L., & Nicholls, J.G. (1992). Dimensions of achievement motivation in schoolwork and sport. Journal of Educational Psychology, 89, 290-299).

Appendix D

Perceived Motivational Climate in Volleyball Questionnaire

QUESTIONNAIRE 2 Subject No:_____

Directions: Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response.

On this volleyball team...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) Players feel good when they do better than teammates.	SD	D	N	A	SA
2) Players are punished for mistakes.	SD	D	N	A	SA
3) Trying hard is rewarded.	SD	D	N	A	SA
4) Players get taken out for mistakes	SD	D	N	A	SA
5) The coach focuses on skill improvement	SD	D	N	A	SA
6) Doing better than others is important	SD	D	N	A	SA
7) Each player's improvement is important.	SD	D	N	A	SA
8) Coach pays most attention to the "stars".	SD	D	N	A	SA
9) Out-playing teammates is important.	SD	D	N	A	SA
10) The coach favors some players.	SD	D	N	A	SA
11) Players try to learn new skills.	SD	D	N	A	SA
12) Players are encouraged to outplay teammates.	SD	D	N	A	SA
13) Everyone wants to be the high scorer.	SD	D	N	A	SA
14) The coach wants us to try new skills.	SD	D	N	A	SA
15) Only the top players "get noticed".	SD	D	N	A	SA

On this volleyball team...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16) Players like playing good teams.	SD	D	N	A	SA
17) Players are afraid to make mistakes.	SD	D	N	A	SA
18) All players have an important role.	SD	D	N	A	SA
19) Most players get to play in the games.	SD	D	N	A	SA
20) Only a few players can be the "stars".	SD	D	N	A	SA
21) Players are encouraged to work on weaknesses.	SD	D	N	A	SA

Directions: Please answer the following question by circling the appropriate number.

Do you think the activities that you did in today's practice session were:

1 2 3 4 5 6 7

(too easy) (challenging) (too difficult)

(Revised from: Seifriz, J.J., Duda, J.L., & Chi, L. (1992). The relationship of perceived motivational climate to intrinsic motivation and beliefs about success in basketball. Journal of Sport & Exercise Psychology, 14, 374-391).

Appendix E

Adaptive and Nonadaptive Behavior Category Descriptions

Context Level

The first level of the decision focuses on what the player is assigned to do. Three major subdivisions are possible:

1) General Content (G): Time when players are not involved in volleyball subject related activities (e.g. transition/change of activity, team selection, drink break, warm up exercises).

2) Subject Matter Knowledge (K): Time devoted to providing knowledge related to volleyball physical activity.

   a) Technique: Transmitting information concerning the physical form of a skill.

   b) Strategy: Transmitting information about plans of action for performing.

   c) Rules: Transmitting information about regulations governing activity.

3) Subject Matter Motor (M): Time when motor involvement in volleyball physical activity is the focus.

   a) Skill Practice: Practice of skills outside the applied context.

   b) Scrimmage/Routine: Time for refinement of skill in a simulated setting which the skill is used; feedback provided.

   c) Game: Time for application of skill in a competition or performance setting; little to no intervention.

   d) Fitness: activities to alter ones present state of fitness through frequency, duration, intensity, etc.

   e) WarmUp Practice: contains some skill practice as well as exercise.

Player Involvement Level

The second level of decision focuses on individual target player(s) when assigned to Subject Matter Knowledge or Subject Matter Motor activities (that is, when the individual target player is given the opportunity to improve his or her knowledge or skill performance). It describes the nature of the person's involvement in a specific way. Two subdivisions are possible:

1. Adaptive Achievement Behaviors: Involvement with subject matter related knowledge or motor activities leading to the improvement of motor skill performance

   MA = Motor appropriate: Player is engaged in assigned motor activity with high degree of success.

   MI = Motor inappropriate: Player response to assigned motor activity is not successful or is having difficulty. (e.g. less than 80% success).

   ON = On-Task: Getting ready or getting on to the assigned task.

   C = Cognitive: Watching or listening to instruction/demonstration, but not motor involved.

2. Nonadaptive Achievement Behaviors: Involvement in an activity not leading directly to the improvement of motor skill performance.

   I = Interim: Interruption of an ongoing activity such as retrieving a ball, adjusting equipment.

   OF = Off-Task: Not motor engaged when supposed to be; deviant but not motor engaged. Not listening.

   MO = Motor Off-Task: Player is engaged in a motor activity but in the wrong activity for the task. (e.g. player has changed the task or is doing the wrong task).

   ME = Motor Too-Easy: Player given a choice of motor activities, has selected a motor activity which is easily performed and presents little challenge.

   MD = Motor Too-Difficult: Player given a choice of motor activities, has selected a motor activity and is engaged with no or little success.

Note. Involvement in adaptive and nonadaptive achievement behaviors are coded only when the individual target player is given the opportunity to improve his or her knowledge or skill performance.

An 'X' is used when:

1. target player is waiting and does not have an opportunity to make a response; (e.g. waiting in line or for next turn as substitute in a game.)
2. target player is servicing another player, such as spotting, measuring, timing and other supportive activities that are not the main focus of the instruction.

(Intervals marked 'X' are not used in the calculation of adaptive or nonadaptive achievement behaviors.)

(Modified from: Siedentop, D., Tousignant, M., & Parker, M. (1982). Academic learning time - physical education, 1982 revision coding manual. Unpublished document, The Ohio State University, School of HPER.)

S 1 : _____ S 2: _____

Context Level

General Content (G)
(e.g. transition, change of activity, team selection, warm up exercises)

SM knowledge (K)
(e.g., technique, strategy, rules)

SM Motor (M)
(e.g., skill practice, scrimmage/routine, game, fitness, warm up practice)

Player Involvement Level

Adaptive Achievement Engaged
Motor appropriate (Ma)
Motor inappropriate (Mi)
On-task (On)
Cognitive (C)

Non Adaptive Achievement Engaged
Interim (I)
Off-task (Of)
Motor off-task (Mo)
Motor too-easy (Me)
Motor too-difficult (Md)

(X - waiting, spotting, etc...)

S 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

S 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

S 1

27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52

S 2

27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52

Appendix F

Coach Consent Form

Faculty of Physical Education & Recreation
University of Alberta
Edmonton, AB, T6G 2H9

Date: 10 October, 1995

Dear Coach,

I am a graduate student working on my Masters degree in the Faculty of Physical Education and Recreation. I am conducting a study on the feelings and participation patterns of youth in a sport setting. Briefly, my study will examine the feelings and thoughts youth have for their participation in sports, and also what they do during their sport instructional/practice sessions. Hence, I wish to obtain your cooperation in allowing me to talk to the players on your team in order to see if some would like to participate in my study and, if so, allowing me to attend practice session(s) to give the players questionnaires and also to observe their behavior patterns during practice.

If you agree, I would arrange to meet players during a practice session to inform them of the nature of the study and to distribute consent forms. Volunteer players will complete the consent forms and hand them to you at the next practice session. I will then contact you to enquire about the number of returned consent forms. Arrangements will then be made for me (and possibly a research assistant) to attend the practice session observation. Up to four volunteer subjects from your team would be observed in one instructional/practice session. Thus, if there are more than four volunteer subjects from your team, arrangement to observe additional practice sessions will be made.

During the practice session(s) used for observation, you would be encouraged to conduct the instructional/practice session and to interact with the participants as you normally would. The volunteer players would be asked to participate in the activities as they normally would. Data on the subjects' participation behavior will be collected by one or two observers, who would be placed close to but not interfering with the practice session activities. The subjects would also be asked to answer 2 sets of questionnaires (that collect information related to their goals for participation, their feelings towards their participation and their ability). One set will be administered prior to the practice session, and the other immediately following the practice session. The questionnaires are short and each will take approximately 5 minutes to complete. Only participants (with permission of their parents) that give consent to be involved in the study will be administered the questionnaires and also be observed. Collected data and records will be kept confidential. The coach and participants would remain anonymous in any print or recorded data.

The study has been approved by the Ethics Committee of the Faculty of Physical Education and Recreation at the University of Alberta and also by your School Board. As a volunteer in the study, you would have the right to withdraw from the study at any time without consequence. The same would be true for player participants in the study.

Your written consent is needed for participation in this study. To indicate your consent, please complete the following consent form and return it to Clara Tan. You will receive a copy of the consent form you completed. If you have any questions, please contact me at 433-8764. You may also contact Dr. Linda Thompson (Thesis Supervisor) for further details about this study. (phone: 492-8274). Thank you for your time and consideration. Your help is greatly appreciated.

Yours truly,

Clara Tan

Coach Consent Form

My signature on this form indicates that I will participate in a study conducted by Clara Tan, titled: Relationships between goal perspectives, perception of the climate, perceived ability, and behavior patterns of youth during volleyball team practices.

I understand the following:

1. I volunteer to participate in the study and have the right to withdraw from the project at any time without prejudice.

2. I have received an explanation about the nature of this study and its purpose, methods and procedures (through letter and discussion with the researcher).

3. There is no danger of physical or psychological harm.

4. The data collected will be confidential and I will remain anonymous in any print material produced.

_____ _____

Signature of Coach Name of Coach (Print Last Name, First Name)

_____ _____

Date of Signature Signature of Researcher (Clara Tan)

Please return this completed form to:

Clara Tan
c/o Dr. L. Thompson
P-421 Van Vliet Centre
Faculty of Physical Education & Recreation
University of Alberta
Edmonton, AB, T6G 2H9

Please keep the covering letter for your own information. You will receive a copy of the completed consent form. Thank you.

Appendix G

Means, Standard Deviations, Maximum and Minimum values for Goal Orientation Score for the Total Sample and the PAvb and PAtks Subgroups

		Goal orientation							
		Mastery (7)				Ego (6)			
	n	M	SD	Max	Min	M	SD	Max	Min
Total sample	68	30.6	2.8	35	22	12.7	4.2	26	6
PAvb									
High	52	30.5	2.4	35	25	13.4	4.1	26	6
Low	16	30.8	3.8	35	22	10.3	3.4	17	6
PAtks									
High	51	30.8	2.5	35	25	12.9	4.0	26	6
Low	17	29.9	3.4	35	22	12.1	4.7	22	6

Note. Number in parentheses reflects the number of items involved in computing the mean. Items measuring mastery and ego goal orientation were on 5-point Likert type scales. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.

Appendix H

Means, Standard Deviations, Maximum and Minimum values for Perceived Motivational Climate Score for the Total Sample and the PAvb and PAtks Subgroups

		Perceived motivational climate							
		Mastery (9)				Ego (12)			
	n	M	SD	Max	Min	M	SD	Max	Min
Total sample	68	38.6	3.7	45	31	31.9	7.6	49	13
PAvb									
High	52	38.5	3.6	45	32	31.9	7.5	49	13
Low	16	38.9	4.0	45	31	31.7	8.4	49	18
PAtks									
High	51	38.7	3.6	45	32	32.6	7.1	49	13
Low	17	38.5	4.1	44	31	29.5	8.8	49	17

Note. Number in parentheses reflects the number of items involved in computing the mean. Items measuring perceived mastery and perceived ego climate were on 5-point Likert type scales. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.

Appendix I

Means, Standard Deviations, Maximum and Minimum Values for Adaptive and Nonadaptive Achievement Behaviors for the Total Sample and the PAvb and PAtks Subgroups

			Achievement behaviors								
			Adaptive					Nonadaptive			
		n	Ma	Mi	C	On	Total	I	Of	Mo	Total
Total sample		68									
	M		65.6	12.3	9.1	1.0	87.9	5.9	4.5	1.7	12.1
	S		11.5	7.3	8.2	1.3	7.0	3.8	5.2	2.4	
	Max						98.4				
	Min						66.7				
PAvb											
High		52									
	M		67.1	11.2	9.6	1.0	88.9	5.6	3.9	1.6	11.1
	S		11.7	7.3	8.6	1.3	6.6	3.9	4.8	2.4	
	Max						98.4				
	Min						68.9				
Low		16									
	M		60.8	15.8	7.2	0.9	84.6	6.6	6.6	2.2	15.4
	S		9.3	6.4	6.9	1.2	7.8	3.6	5.8	2.3	
	Max						94.0				
	Min						66.7				

			Achievement behaviors								
			Adaptive					Nonadaptive			
		n	Ma	Mi	C	On	Total	I	Of	Mo	Total
PAtks											
High		51									
	M		68.6	10.7	9.4	0.9	89.5	5.6	3.3	1.6	10.5
	S		9.8	6.5	8.6	1.2	5.5	3.8	3.4	2.4	
	Max						98.4				
	Min						77.4				
Low		17									
	M		56.6	17.2	8.2	1.4	83.2	6.8	8.0	2.0	16.8
	S		11.5	7.6	7.2	1.5	9.1	3.8	7.6	2.5	
	Max						95.9				
	Min						66.7				

Note. Mean, maximum and minimum values are presented in percentages. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability; Ma = motor appropriate; Mi = motor inappropriate; C = cognitive; On = on-task; I = interim; Of = off-task; Mo = motor off-task.

Appendix J

Means, Standard Deviations, Maximum and Minimum Values for Goal Orientation Score for the Total Sample and the PAvb and PAtks Subgroups (with the exclusion of outliers)

	Goal orientation							
	Mastery (7)				Ego (6)			
	M	SD	Max	Min	M	SD	Max	Min
Total sample	30.7	2.6	35	25	12.5	3.9	22	6
PAvb								
High	30.5	2.4	35	25	13.2	3.8	22	6
Low	31.3	3.0	35	25	10.3	3.4	17	6
PAtks								
High	30.8	2.5	35	25	12.6	3.6	19	6
Low	30.4	2.8	35	25	12.1	4.7	22	6

Note. Number in parentheses reflects the number of items involved in computing the mean. Items measuring mastery and ego goal orientation were on 5-point Likert type scales. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.

Appendix K

Means, Standard Deviations, Maximum and Minimum values for Perceived Motivational Climate Score for the Total Sample and the PAvb and PAtks Subgroups (with the exclusion of outliers)

	Perceived motivational climate							
	Mastery (9)				Ego (12)			
	M	SD	Max	Min	M	SD	Max	Min
Total sample	38.6	3.7	45	31	32.1	7.3	49	17
PAvb								
High	38.5	3.6	45	32	32.3	7.0	49	17
Low	38.9	4.0	45	31	31.7	8.4	49	18
PAtks								
High	38.7	3.6	45	32	33.0	6.6	49	17
Low	38.5	4.1	44	31	29.5	8.8	49	17

Note. Number in parentheses reflects the number of items involved in computing the mean. Items measuring perceived mastery and perceived ego climate were on 5-point Likert type scales. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability.

Appendix L

Means, Standard Deviations, Maximum and Minimum Values for Adaptive and Nonadaptive Achievement Behaviors for the Total Sample and the PAvb and PAtks Subgroups (with the exclusion of outliers)

		Achievement behaviors								
		Adaptive					Nonadaptive			
		Ma	Mi	C	On	Total	I	Of	Mo	Total
Total sample										
	M	66.7	12.1	9.0	1.0	88.8	5.7	3.8	1.7	11.2
	S	10.2	7.0	8.4	1.3	5.7	3.8	3.8	2.4	
	Max					98.4				
	Min					74.5				
PAvb										
High										
	M	67.8	10.8	9.6	1.0	89.3	5.7	3.4	1.6	10.7
	S	10.6	6.8	8.6	1.3	6.0	3.9	3.8	2.4	
	Max					98.4				
	Min					74.5				
Low										
	M	62.9	16.7	6.6	0.8	87.1	5.9	5.0	2.0	12.9
	S	7.7	6.2	7.1	1.2	4.2	3.2	3.5	2.1	
	Max					94.0				
	Min					81.5				

		Achievement behaviors								
		Adaptive					Nonadaptive			
		Ma	Mi	C	On	Total	I	Of	Mo	Total
PAtks										
High										
	M	68.6	10.7	9.4	0.9	89.5	5.6	3.3	1.6	10.5
	S	9.8	6.5	8.6	1.2	5.5	3.8	3.4	2.4	
	Max					98.4				
	Min					77.4				
Low										
	M	60.0	17.3	7.7	1.4	86.5	6.3	5.3	1.9	13.5
	S	8.8	6.7	7.7	1.5	5.9	3.7	4.6	2.4	
	Max					95.9				
	Min					74.5				

Note. Mean, maximum and minimum values are presented in percentages. PAvb = volleyball-specific perceived ability; PAtks = task-specific perceived ability; Ma = motor appropriate; Mi = motor inappropriate; C = cognitive; On = on-task; I = interim; Of = off-task; Mo = motor off-task.